Commonwealth of Massachusetts

Department of Public Health

Application for FFY 2008 ASPR

Hospital Preparedness Program Cooperative Agreement

Summary

The goal of the Emergency Preparedness Bureau within the Department of Public Health (DPH) is to work collaboratively with all internal and external partners in order to implement and operationalize an all-hazards approach to public health emergencies by developing, training, and exercising an integrated and effective local, regional, statewide and inter-state response plan.

DPH will utilize funding from the Assistant Secretary for Preparedness and Response's (ASPR) Hospital Preparedness Program (HPP) to build medical surge capability through associated planning, personnel, equipment, training and exercise capabilities at the state, regional, and local levels. DPH will develop medical surge capability by focusing on the Level One and select Level Two Sub-Capabilities identified in the FFY 2008 ASPR HPP Funding Opportunity Announcement (FOA), and summarized below. Level One Capabilities will be met by August 9, 2009.

As in FFY 2007, DPH will focus program and project objectives on the five goals prioritized in the PAHPA legislation – *integration* of public and private healthcare systems with the public health and public safety sectors; enhance the *medical* preparedness, response and surge capacity of the healthcare system; address the needs of *at-risk individuals;* ensure *coordination* of preparedness activities with federal, interstate, interagency, regional, coalition and local partners; and maintaining *continuity of operations* in the event of a public health emergency. Individual project objectives summarized below contribute to one or more of these goals.

As in previous years, DPH will distribute the majority of ASPR funding received by the Commonwealth directly to our 75 participating hospitals via a contractual agreement (generally referred to in this application as the 'Hospital MOA' or the 'hospital agreement') that incorporates specific, measurable, attainable, realistic and time-framed outcome objectives. For FFY 2008, these tasks will include deliverables that are essential for meeting Level One and select Level Two Sub-Capabilities. Specific Level One deliverables will include interoperable communications, bed status and asset reporting, ESAR-VHP participation, fatality management, and planning for evacuation/shelter-in-place at the Tier 2 and Tier 3 levels. In addition, DPH will support continuation of the Partnership for Effective Emergency Response (PEER) currently being implemented across three of our hospital preparedness regions, and will support development of at least one additional healthcare partnership in another area of the Commonwealth.

As in FFY 2007, Level Two Sub-Capability hospital deliverables for FFY 2008 will include alternate care site planning, pharmaceutical cache availability for workers and families, and training and exercises for personal protective equipment and decontamination. NIMS compliance, planning for at-risk individuals and participation in training and exercises are incorporated into all Level One and Level Two deliverables. Included in our application is a comprehensive listing of the progress of all participating hospitals in achieving each of the 14 NIMS elements that were outlined in the NIMS Implementation Activities for Healthcare Organizations. Hospitals that are still working to complete adoption of NIMS activities will be required to prioritize funding to ensure full compliance by August 9, 2009. Participating hospitals will track NIMS compliance and report annually. Hospitals must also document that they will meet all Level One deliverables and that they will comply with the remaining 13 NIMS

FFY 2007 requirements by August 8, 2008 before any budget plans for Level Two (or other sub-capabilities) will be approved.

Level One Sub-Capabilities

DPH fully meets current Level One Sub-Capabilities for interoperable communications and bed status reporting, and will maintain and enhance existing systems in order to remain compliant. New interoperability standards and reporting requirements included in the FFY 2008 FOA, as well as requirements from DHS and HHS in both areas, will require additional work in the coming year. Training will be provided and regular drills and exercises conducted to maintain and improve system and user operational capability and capacity. Bed status reporting is being expanded to include a wider array of medical assets, and the capability of transmitting information and data to other federal, state and local agencies. DPH continues to be actively involved with state, regional and local public safety agencies and other partners in the implementation of a SAFECOM-compliant 5-year Statewide Communications Interoperability Plan (SCIP).

The Massachusetts System for Advance Registration of Health Professionals (MSAR) currently meets existing compliance requirements for the ESAR-VHP program, and is prepared to address additional requirements when ASPR releases new guidelines. For FFY 2008 MSAR will continue to recruit, register, train and retain pre-credentialed volunteers as directed under the Guidelines. Work will focus on more closely aligning the statewide MSAR program with locally based Medical Reserve Corps assets, and will prioritize collaborative coordination of recruitment, training and continued engagement of volunteers by the programs.

HPP-participating hospitals in Massachusetts are accredited by the Joint Commission, and have all developed horizontal and vertical evacuation plans. In FFY 2008, DPH will work with Regional Hospital Coordinators, participating hospitals, chronic care facilities, and other response partners to identify and evaluate triggers for evacuation and sheltering-in-place of patients. DPH will also continue to integrate planning of participating hospitals into their community's comprehensive emergency management plan (CEMP) as well as Tiers 2, 3, and 4 of the tiered response framework.

DPH is supporting fatality management planning at the state, regional, and local levels. While fatality management in Massachusetts is primarily a public safety responsibility, DPH has leveraged ASPR and CDC funding to support fatality surge planning by hospitals and local public health departments. DPH is working with the Office of the Chief Medical Examiner (OCME) and the Massachusetts Emergency Management Agency to develop a statewide fatality management plan that will be coordinated with ongoing planning by hospitals during FFY 2008.

DPH has encouraged the formation of hospital and healthcare "partnerships" at the local and regional level. The Metro Boston regions in Massachusetts received one of the competitively funded Healthcare Facilities Partnership Program cooperative agreements in FFY 2007, and DPH has worked closely with this project—the Partnership for Effective Emergency Response (PEER)—to encourage activities and efforts that complement the state application, and enhance state planning for FFY 2007 ASPR priorities. Incorporation of public health and healthcare

partners that receive no or very limited ASPR HPP funding has been one element of PEER's success, and DPH will work to support future efforts within PEER and in another region of the Commonwealth.

Level Two Sub-Capabilities

Using a health systems approach, DPH will continue in FFY 2008 to enhance and refine planning for all-hazards alternate care sites. DPH will continue to support hospital-based cluster planning, and encourage multi-disciplinary collaboration among hospitals, local public health, emergency medical services, long-term care facilities, community health centers, public safety and other partners. In addition, DPH will expand efforts to work with health plans and large community-based medical practices to ensure an integrated plan addressing alternate care site locations, triage protocols, surge staffing issues, training and exercises.

DPH will continue to support maintenance and deployment of regionally placed mobile mass casualty trailers that can be readily deployed in the event of a disaster or emergency. Due to Massachusetts's geographic and climate considerations, mobile medical asset planning for the coming year will focus on identifying regional locations for the receipt of a deployable mobile Federal Medical Station, and on maintaining and exercising deployment of our mobile mass casualty incident regional trailers.

Pharmaceutical cache activities will focus on reporting and assessment of required levels of antibiotics for work force and family member protection. Hospitals may purchase Mark 1 kits for work force protection as deemed necessary. Antivirals may be purchased using 5% of a hospital award, but only after all Level One requirements have been met. A Chempack training will be conducted, in conjunction with staff from the state's Strategic National Stockpile program, for hospitals in 2008 as part of the state's Multi-year Training and Exercise Plan.

DPH will continue to partner with the Department of Fire Services (DFS) to provide training on the appropriate use of personal protective equipment (PPE) and decontamination equipment. This year we will be focusing on transitioning to a "train-the-trainer" method for delivering training for both PPE and decontamination. Purchase of additional PPE will be limited to replacements necessary to address specific HVAs and will only be allowed if the facility documents compliance with all Level One requirements. DPH will continue to support the maintenance and exercising of mass decontamination equipment.

Additional Considerations

DPH will work with Regional Hospital Coordinators to integrate MRCs at regional hospital meetings. Collaboration at these meetings will further integrate MRCs into healthcare sector preparedness planning. The second planned integration of MRC volunteers is enrolling them into the MSAR system. Regional Hospital Coordinators will work with MRC coordinators, hospitals, and the MSAR/MRC coordinator to align recruitment, credentialing, training and protocols across the programs.

Protection of critical infrastructure is necessary for healthcare institutions to operate. DPH will approve requests from hospitals seeking to use HPP grant funds after determining that all overarching, level 1 and 2 benchmarks have been met. Hospitals will be allowed to spend a certain percentage of their HPP grant funds toward target-hardening and critical infrastructure protection items.

Overarching requirements are incorporated into projects throughout the work plan. NIMS compliance and planning for at-risk individuals are core requirements for all hospital MOAs and will continue to be incorporated into all training and exercises. Projects proposed for interoperable communications, MSAR and MRC volunteers, hospital evacuation and sheltering-in–place, mass fatality planning, alternate care site planning, PPE and decontamination will address both NIMS usage and at-risk populations.

On-going statewide committees for surge planning, hospital emergency department crowding, EMS and hospital communication, mass casualty incidents, pandemic planning, MSAR, MRCs, long-term care facility emergency preparedness, special and at-risk populations operate under the ASPR HPP and are coordinated with activities funded through CDC's Public Health Emergency Preparedness (PHEP) program.. Additionally, planning at the Tier 2 and Tier 3 levels occurs during the monthly meetings of committees comprised of all hospital and healthcare partners in each of the six hospital preparedness regions.

Our partner programs within DPH and in the Massachusetts Executive Office of Public Safety and Security (EOPSS) convene other committees dealing with education and training, Strategic National Stockpile, mass care and sheltering, statewide interoperable communications, and exercises.

The Emergency Preparedness Bureau Director, who serves as the Principal investigator for the ASPR and CDC grants, is a member of the HSPD-8 Agency Heads Group, an interagency committee that includes officials directly responsible for the administration of DHS grants and CDC and ASPR cooperative agreements. The Director also sits on the State Interoperability Executive Committee, an interagency committee tasked with implementation of the SCIP.

Description of Applicant Organization

The Massachusetts Department of Public Health (DPH) is one of 16 departments and divisions within the Commonwealth's Executive Office of Health and Human Services (EOHHS). Working with an annual budget of more than $875 million and nearly 3,200 employees, the Department's stated goal is "**Helping People Lead Healthy Lives in Healthy Communities".**

The Commissioner of Public Health is John Auerbach, who was appointed to the post in April 2007. Under the Massachusetts General Laws, the Commissioner administers the health and sanitation laws and regulations of the Department. Decision-making authority is generally vested in the Commissioner, although in some cases, such as the adoption of regulations and the granting of certain licenses, state law requires actions be approved by a 15-member Public Health Council that is chaired by the Commissioner.

There are 11 Bureaus and a number of Divisions, Offices and Programs within the Department.[1] More than 120 sets of regulations and statutes provide the framework for the Department's broad-based responsibilities and authority to take actions to protect, preserve, and promote the health of the residents of the Commonwealth. A listing and description of the Bureaus, Divisions and Programs within DPH can be found at http://www.mass.gov/dph/dphorg2.htm.

Within the Department, the Emergency Preparedness Bureau (EPB) coordinates and manages the activities of the two principal preparedness funding streams: the Centers for Disease Control and Prevention (CDC) Public Health Emergency Preparedness Cooperative Agreement and the Assistant Secretary for Preparedness and Response (ASPR) Hospital Preparedness Program Cooperative Agreement. EPB ensures the timely and efficient completion of preparedness grant deliverables by all appropriate funding recipients, including EPB itself, other bureaus within DPH (Environmental Health, Communicable Disease Control, etc.), other state agencies (e.g., the Office of the Chief Medical Examiner), and local public health authorities and healthcare organizations.

Initially, emergency preparedness activities funded through the CDC or ASPR (then HRSA) were managed by senior staff in several bureaus within the Department. In 2003, a Center for Emergency Preparedness was established to enhance coordination between all DPH emergency preparedness programs and activities and to provide additional linkages with programs funded through the Department of Homeland Security (DHS) and the state's Executive Office of Public Safety and Security (EOPSS). Between 2003 and 2007, the Center was managed by acting or interim Directors who assumed responsibility for Center activities in addition to their other full-time departmental responsibilities. In 2007, Commissioner Auerbach established Emergency Preparedness as one of the Department's 11 Bureaus. In October 2007, Mary E. Clark[2], JD, MPH, was hired as the first full-time, permanent Bureau Director.

With the creation of the Emergency Preparedness Bureau, the Department has moved to integrate all public health and hospital emergency preparedness activities under a single leader. As of April 2008, Ms. Clark became the Principal Investigator for both the CDC and ASPR

[1] For a copy of the Department of Public Health's organizational chart, please visit: http://www.mass.gov/dph/comm/org_chart.pdf
[2] For a copy of Ms. Clark's Curriculum Vitae, please see Appendix B.

cooperative agreements.[3] This re-organization supports stronger collaboration within the Department, and encourages greater connectivity at the state, regional and local levels, and across state and local public health, hospitals and other health care organizations, emergency medical services, emergency management and public safety agencies, and other response partners.

Evidence of EPB capacity and capability to provide the rapid and effective use of resources needed to meet the deliverables of the HPP cooperative agreement, collect necessary data and evaluate it, and to incorporate the input of our partners at the state and local level have been developed using a series of strategic approaches over the past six years. These strategies have included:

1. **Hospital Planning Regions:** One of the earliest accomplishments of the Hospital Preparedness Program was the establishment of six Hospital Emergency Preparedness Planning Regions. While regional EMS planning had been occurring through the five EMS Regional Councils which had existed for over 20 years, no comparable regional planning existed for hospitals or for local public health agencies. The ASPR and CDC funding helped to establish coordinated regional mechanisms for hospitals, health centers, clinics and local public health agencies. Regional planning has increasingly been broadened to incorporate all healthcare assets and partner agencies. Having long recognized the importance of cross-disciplinary partnerships in planning for effective response to health and medical emergencies, DPH strongly supported development of the Partnership for Effective Emergency Response (PEER), a multi-disciplinary partnership that connects 3 of our 6 hospital preparedness regions in an integrated planning effort. Lessons learned through PEER will help guide the development of an additional partnership in one or more of our non-CRI hospital preparedness regions during FFY 2008.

2. **Hospital Memoranda of Agreement (MOA)** - use of hospital MOAs and contracts address and achieve hospital-related performance requirements for the ASPR cooperative agreement. Traditionally, the majority of ASPR funding received has been distributed to individual healthcare facilities in direct grant funded allocations. For FFY 2008, hospital MOAs and contract funding will support compliance with the Overarching Requirements and the Level One and Level Two Sub-Capabilities described in the HPP 2008 guidance, and corresponding performance measures and reporting elements. A portion of funds directed to hospitals will be used to support the continued work of PEER, and to establish a new partnership in one or more of our non-CRI sub-state hospital preparedness regions. As in past years, hospital budgets will be submitted to and approved by DPH, and will be structured to support regional planning efforts. In FFY 2008, we will work to align ASPR and Joint Commission requirements to maximize the effectiveness of limited funding, avoid duplication of effort, and reduce burdens on participating hospitals to the extent possible.

3. **Contracted Services** - Contracts have been awarded to support and enhance Community Health Centers, EMS systems, Poison Control, hospital LRN A laboratories, Interoperable Communications, Medical Reserve Corps (MRC), MSAR (Massachusetts's ESAR-VHP),

[3] For a copy of the EPB's organizational chart, please see Appendix A.

Data Reporting, Surveillance, Training and Exercises. These contracts provide direct support or essential services for public health and healthcare systems.

4. **Statewide Advisory Committees and workgroups** – DPH staff and hospital and health care organization representatives participate in numerous committees and workgroups that advance the work of the Hospital Preparedness Program. These currently include Surge Planning, MSAR, Medical Reserve Corps Steering Committee and Statewide Advisory Committee, Pandemic Planning, Strategic National Stockpile Workgroup, Emergency Dispensing Site Workgroup, At-Risk and Special Populations Task Force, Statewide Interoperability Executive Committee, Education and Training, Exercises, Mass Casualty Incidents, and CDC/ASPR/DHS inter- and intra-agency planning. These will be expanded in 2008 to include working groups on Fatality Management and Hospital/Healthcare Facility Evacuations that will be charged with planning at a Tier 2 and Tier 3 level. All committees and workgroups are comprised of a broad and diverse membership from state, regional and local government and federal agencies in addition to representatives from all healthcare, public health, medical, legal, behavioral health, mental health, community health, public safety and law enforcement agencies and organizations.

5. **HSPD-8 Advisory Committee/Implementation Team** - The Statewide HSPD-8 Advisory Committee is coordinated through the Executive Office of Public Safety and Security and includes state officials directly responsible for the administration of DHS grants and the CDC and ASPR cooperative agreements - the State Administrative Agency (SAA) Homeland Security Director, Emergency Preparedness Bureau Director, Hospital Preparedness Coordinator (position now vacant), and the CDC Program Director. In addition, senior program representatives from the following agencies are included: EOPSS, Massachusetts Emergency Management Agency (MEMA), Massachusetts State Police (MSP), Department of Fire Services (DFS), National Guard, Regional Transportation Authorities, and the Office of Emergency Medical Services (OEMS). This team was created in FFY 2005 to look at all federal grants and was responsible for developing the Massachusetts-applicable assessment for the 15 DHS priority scenarios, a statewide capability and gap analysis for each scenario and in 2006 participated in the DHS on-site state review for compliance with the National Response Plan and security reviews for the state nuclear power plants. In 2007, a smaller HSPD-8 Agency Heads Workgroup was established; the EPB director is an active member of this Workgroup.

Overarching Requirements

National Incident Management System

To comply with FFY07 HPP requirements, regional hospital coordinators surveyed and distributed documents to all participating healthcare organizations to determine the level of compliance with each of the 14 NIMS Implementation Measures as described in Appendix B of the funding opportunity announcement. Although the majority of the healthcare organizations have completed the 14 required activities, some organizations continue to work on complying with the required NIMS activities.

During the FFY2008 funding period, participating healthcare organizations will be instructed to prioritize their funding to ensure that all 14 required NIMS activities are completed by August 8, 2009. In addition to prioritizing their funding, Regional Hospital Coordinators will work with these organizations to provide technical support and assistance to further ensure compliance with each activity. This assistance will include reviewing of Emergency Operations Plans, identifying training resources (i.e. ICS courses; JIC/JIS training, etc.), participating in exercise planning to ensure NIMS is incorporated and tested, and ensuring interoperable communications capabilities by working with local and State planning partners.

Education and Preparedness Training

The Emergency Preparedness Bureau at DPH participates in, and provides a number of competency-based education and training initiatives. Different agencies within Massachusetts continue to support these programs. The Department of Fire Services (DFS) and DPH provide ASPR-related training opportunities as identified in the program objectives of the Level One and Level Two Sub-Capabilities. Requirements for competency-based trainings, prohibitions against backfill, cost-sharing and biennial reporting of the numbers and roles of hospital personnel attending training are required in the hospital MOA.

DPH HPP training opportunities for FFY 2008 funding include the following:

1) DPH through a partnership agreement with the DFS Training Academy has developed and continues to present PPE and decontamination related trainings including hazmat and counterterrorism awareness, PPE and decontamination initial, refresher and train-the-trainer courses. These courses will continue to be offered throughout the funding period to ensure that healthcare personnel receive the necessary training to perform their duties in a safe and efficient manner.

2) During FFY08, DPH will continue to provide funding for training opportunities for hospitals and long-term care systems at the DelValle Institute for Emergency Preparedness in Boston. Del Valle is operated by the Boston Public Health Commission and has historically been funded by the CDC's PHEP cooperative agreements and from DHS's Urban Area Security Initiative grant funding streams. Attendance at Del Valle trainings was limited to hospitals and health care systems within the City of Boston while

DPH provided the same trainings to healthcare providers in the other remaining 350 municipalities in the Commonwealth.

Collaborative working relationships have always existed between Del Valle and the DPH/DFS training coordinators, but were strengthened as a result of the receiving HPP funding. Certain non-redundant Del Valle training programs will be opened to hospitals outside on the Boston region for the first time. These will include opening three programs for the training of 100 students each, and additionally providing DPH with four online Boston MRC on-line leadership training programs that will be available to MRC and MSAR volunteers statewide.

3) Communications trainings are provided by the DPH's Communications/IT Systems Coordinator and HHAN (Health and Homeland Alert Network) Coordinators. These trainings include the full range of HPP communications systems – Nextel/Verizon cellular phones and Satellite phones, push-to-talk radiophones, HHAN, Bed Status reporting, and emergency room diversion reporting systems.

4) The Harvard School of Public Health's Center for Public Health Preparedness, in cooperation with DPH has developed an on-line training program for CHEMPACK that will be available to all healthcare providers via the DPH PACE training system. In addition, the trainings will be available in other formats such as DVD/CD and live training to ensure that the training needs of all responders are met.

5) DPH will continue to work with our partners at the Massachusetts Emergency Management Agency (MEMA) to offer courses to healthcare providers that are available through the Center for Domestic Preparedness at the Noble Training Facility in Anniston, AL. These courses consist of Pandemic Influenza Planning and Preparedness; Hospital Emergency Response Training for MCI; Healthcare Leadership and Administrative Decision making; Fundamentals of Healthcare Emergency Management; Advanced PIO Health and Hospital Emergencies; WMD Emergency Medial Services Training; Radiological Emergency Response Operations and Advanced Radiological Incident Operations.

6) In addition to the above trainings that will be offered and incorporated into exercises that will be conducted during the course of the grant year, DPH will continue to offer the Homeland Security Exercise and Evaluation Program (HSEEP) Mobile course and the HSEEP Toolkit course to all interested healthcare and hospital staff. Additionally, during the FFY08 funding year an Exercise Design course will be offered to all interested parties. These three courses will train hospital and healthcare staff in all phases of exercise project and program management including design, development, conduct, evaluation and improvement planning.

The above trainings are offered to complement other preparedness activities that are occurring across the Commonwealth and relate back to the Hazard and Vulnerability Assessments received by the hospitals within each planning region. By offering the Homeland Security Exercise and Evaluation Program (HSEEP) mobile course, participants

will learn how to incorporate items identified within the Hazard and Vulnerability Assessments as well as trainings that have been completed to conduct a viable Capabilities Assessment in which to build their exercise program upon.

Exercises, Evaluation and Corrective Actions

The Emergency Preparedness Bureau at DPH recently updated their Multi-year Training and Exercise Plan (TEP) which has been included with this submission in Appendix D. The DPH Multiyear TEP is the roadmap that DPH will use to accomplish the priorities presented in their Centers for Disease Control (CDC) and Prevention Public Health Emergency Preparedness (PHEP) Cooperative Agreement as well as the Hospital Preparedness Program (HPP) administered by ASPR. DPH has implemented a coordinated all-hazards strategy that combines enhanced planning, innovative training, and realistic exercises to strengthen DPH emergency prevention and response capabilities. Training and exercises play a crucial role in this strategy, providing DPH with a means of attaining, practicing, validating, and improving new capabilities.

Within this plan, each identified priority (i.e. Interoperable Communications; Chempack; Healthcare Facility Evacuation/Shelter-in-Place, etc.) contains a listing of associated capabilities as well as the trainings and exercises that will support the priority and the associated capabilities. Additionally, a detailed schedule of training and exercises that are planned between June 2008 and August 2009 is incorporated into the plan. The schedule clearly depicts the exercises that are being planned in which CRI and non-CRI cities will participate during this timeframe. It should also be noted that there will be additional exercises that will occur during the year that have not yet been planned, but they will be incorporated into this schedule as details are finalized. As a result, DPH will provide our Project Officer with periodic updates of the schedule during the course of the grant year.

In addition to the Multi-year Training and Exercise Plan for the Department, the Emergency Preparedness Bureau will require that each of the six hospital regions develop their own regional TEP, in accordance with HSEEP guidelines. Doing so will ensure that healthcare organizations are fully engaged in the design, development, conduct, evaluation and improvement planning of exercises in which their organization participate. DPH will also be promoting the use of the Lessons Learned Information Sharing (LLIS) website to be able to share lessons learned from exercises that are conducted in the Commonwealth, but also across the entire Nation. This valuable tool will allow healthcare organizations to learn from others as well as share their experiences for other to learn from.

All healthcare organizations will be required to notify their Regional Hospital Coordinator of all trainings and exercises that will be conducted using HPP funding. For trainings, healthcare organizations will provide the subject matter of trainings conducted and the number of staff trained by the organization. For exercises, healthcare organizations will provide the following information: the type of exercise; sub-capabilities being tested and the participants to be included. This information will be included with submission of the our end-of-year progress report. Additionally, healthcare organizations will be required to submit an HSEEP compliant After Action Report/Improvement Plan (AAR/IP) to their Regional Coordinator within 60 days of completion of any exercise funded by HPP so that it may be included with the end-of-year report.

Needs of At-Risk Populations

The Department of Public Health is committed to working to effectively plan and prepare for individuals who may require additional assistance in an emergency. Efforts are underway at state, regional and local levels to address the needs of individual, groups and communities that may experience barriers as a result of medical, physical, mental or cognitive disabilities, as well as those whose ability to respond in an emergency may be limited by language issues, economic status, culture or age. Hospitals will be expected to incorporate into their continuity of operations plans provisions for patients who require life-saving treatments on an outpatient basis (i.e. chemotherapy, radiation, Dialysis). DPH recognizes that these patients must have their scheduled treatments for survival. During general disasters or facility-based emergency conditions (physical plant failure, etc.), hospital personnel will be expected to reach out to their At-Risk population patients to determine safe measures for continued treatment.

Considerations and planning for the needs of individuals who require additional assistance are incorporated throughout this FFY 2008 HPP funding application. One critical element of that planning process is the inclusion of individuals who require additional assistance as fully participating members on planning committees and working groups. The Department has made it a priority to include individuals who require additional assistance into hospital drills and exercises and planning, and has targeted the needs of these populations in education and training activities.

Specific initiatives for FFY 2008 will include distribution of revised guidance to aid hospitals and other healthcare organizations in creating planning coalitions to meet the needs of individuals requiring additional assistance; development of a hospital evacuation and/or long-term care facility exercise template that incorporates the needs of these groups; identification of novel recruitment strategies aimed at increasing the availability of American Sign Language (ASL) and multi-lingual MSAR and Medical Reserve Corps volunteers to expand the cadre of trained volunteers who can effectively meet the needs of at-risk populations, a recently initiated workgroup on pediatric surge issues; and the continuing partnerships to prepare for and mitigate the psychological impact of disasters.

HPP will continue to work with the Disabilities Policy Consortium to implement statewide the training curriculum that was developed and piloted in FFY 2007. The curriculum is intended to inform participants about disaster and emergency preparedness and encourage dialogue between Personal Care Attendants (PCAs) and employers toward the development of emergency plans. It will help participants understand types of emergencies, when an emergency is occurring, and how to plan in advance for an appropriate response under emergency conditions. Information about community emergency response systems will be presented and participants will collaborate to develop personal emergency and evacuation plans, including establishing support networks, preparing a go-bag of essential items, collecting important documents and medical information, as well as assembling items that might be needed if immediate evacuation is not possible or sheltering in place is necessary for short or extended periods of time.

An essential element of the state's planning efforts will also include development of partnerships with six schools in Massachusetts serving different at risk populations: the Beverly School for

the Deaf, Clark School for the Deaf, Horace Mann School for the Deaf and Hard of Hearing, Learning Center for Deaf Children, Perkins School for the Blind and Willie Ross School for the Deaf. These partnerships will strengthen DPH's ability to facilitate recruitment of MRC/MSAR members and to expand the opportunity to include members of this community in drill and exercises.

Through its Health Equity and Communications Departments, DPH will continue to work with hospitals to ensure availability of competent medical interpreter in all languages needed by patient, and is participating in the International Medical Interpreters Advisory Panel to develop a formally recognized certification to ensure all medical interpreters meet minimum standards.

DPH's HPP staff will continue to work closely with activities underway through the CDC PHEP grant funding, and will work in collaboration with public safety, hospitals and emergency management partners to collaboratively identify and address the needs of at-risk populations. HPP will also actively participate in efforts to address the overarching requirement of working with the Executive Office of Elder Affairs. Of particular note, HPP will work closely with PHEP efforts to expand the Flu Care at Home materials to include Chinese, Haitian Creole, Vietnamese and Khmer (in additional to Spanish and Portuguese), as well to develop a simplified version of those materials with a focus on health literacy. The purpose of developing the Flu Care at Home campaign is to educate the public about the need to take care of themselves at home with the goal of lessening the surge on hospitals. The Flu Care at Home Project (PHEP-funded, with advice and support from HPP staff) includes distribution of materials to local public health and healthcare facilities as well as a train-the-trainer component that all community health centers participating in HPP activities will attend.

Level One Sub-Capabilities

Interoperable Communication Systems & Telecommunications Service Priority Program

Current Status

DPH has equipped participating hospitals, CMED (Central Medical Emergency Direction) centers, EMS Regional Directors and other healthcare partners with communication devices which allow for horizontal and vertical communication with EMS, fire, law enforcement, local and state public health agencies, nearby community health centers, long-term care and assisted living facilities, and other medical and referral centers. This redundant communication system includes landline and wireless priority access through registration with the National Communication Service's GETS/WPS priority access programs, cellular phones with radio push-to-talk and text messaging functionality, a satellite phone network, a voice over internet protocol (VoIP) network, VHF radios, emergency contact information flash drives, alert network and email listservs.

This redundant and interoperable communication system allows connectivity, during an emergency, between other healthcare facilities and state and local health departments, emergency medical services, emergency management agencies, particularly the State Emergency Operation Center, public safety agencies, neighboring jurisdictions and state and federal public health officials. The communications system can currently support hospital medical surge capacity and capability, mainly Tier 1, 2, 3 and 4, as defined in ASPRs Medical Surge Capacity and Capability Handbook, linking all health-related organizations that participate in the HPP program, as well as others that have been identified as crucial in emergency response.

DPH currently meets many of the ASPR expectations and real-time technology recommendations for the interoperable communications sub-capability. DPH must budget appropriately to maintain the established systems to remain compliant with the ASPR guidance. The new requirement of three hospitals or healthcare entities per sub-state region participating in the Federal Communications Commissioner's (FCC) Telecommunications Service priority program (TSP) will require additional work in the coming year. Training and exercises are necessary to maintain system and user operational capability and capacity. DPH has created a redundant communications system and plans to continue building out the network components.

In addition, DPH is actively participating in a state 5-year SAFECOM-compliant interoperability plan that includes the primary disciplines covered by the ASPR and CDC cooperative agreements – hospitals, EMS and public health at the state, regional and local levels. Current activities include active DPH ASPR representation on the Massachusetts State Interoperability Executive Committee (SIEC) that is charged through the direction of the Secretary of Public Safety with developing a five-year plan for enhancing interoperable communications in the Commonwealth. The SIEC consists of state officials from key state

agencies, communications representatives of the five homeland security regions, and representatives of the major public safety disciplines.

DPH has established communications protocols with the identified technologies and back-up systems when needing to alert all MA hospitals and other healthcare partners of an incident or emergency. DPH may use all or any of these communication systems when pushing an alert, instructions or any type of message to its healthcare partners.

The following are examples of the equipment, systems and protocols DPH uses when alerting its partners of an incident or emergency.

1) **Nextel and Verizon Phones** - DPH has distributed Nextel and/or Verizon cellular phones to relevant DPH emergency preparedness and response staff, all hospitals, regional hospital, public health and EMS coordinators, CMED centers, key public safety and other healthcare partners and may use cellular and/or radio push-to-talk call groups to alert responders.

2) **Satellite Phones** - DPH has issued satellite phones to all hospitals, CMED centers, EMS Regional Directors and key DPH staff at the central office and at the MA State Laboratory. Facilities may use satellite phones as a back up system to other communications options. DPH purchased fixed antenna units for hospitals and CMED centers so they may use the device inside their facilities whereas DPH purchased mobile devices for EMS Regional Directors and DPH staff, as they would likely be mobile to and from an incident scene. The portable satellite phone offers redundancy for real-time communication should landline and cellular become unavailable. DPH drills the phones on a quarterly basis to ensure connectivity and user proficiency.

3) **Flash Drives** - DPH has distributed emergency contact information on portable key-chain emergency flash drives. The Massachusetts Hospital Association (MHA), in partnership with the DPH, issues periodic updates to the emergency contacts directory and instructs those with flash drives to update the files on the portable device.

4) **Listservs** – The hospital and text messaging listservs are user-friendly e-mail address groups populated with healthcare staff email and all ASPR funding cellular phone text messaging addresses.

5) **Emergency Contacts Directory** – DPH and the Massachusetts Hospital Association populate this list with addresses provided by hospitals in an annual emergency contacts survey.

6) **Blast Fax and Email** - MHA may use their internal lists of all hospital CEOs of an incident via blast e-mail and fax.

7) **Text Messaging** - DPH or MHA have the ability to push a text message to all DPH-funded Nextel and Verizon hospital phones. DPH can send the text message via a listserv and/or the Health and Homeland Alert Network (HHAN).

8) **Health and Homeland Alert Network** – DPH has integrated all communications devices purchased for Massachusetts hospitals with ASPR funding into the HHAN in an emergency hospital contacts role so that in the event of an emergency, alerts and DPH may send direction to all communications devices distributed to hospitals and public health partners. In addition, DPH has created alerting groups for internal response, emergency department, long-term care and assisted living facility staff. DPH can now monitor receipt and confirmation of any alerts sent via the HHAN to these groups. DPH drills the hospital roles once a month and disseminates results to troubleshoot any issues and to increase participation in and familiarity with the communications project and the various devices associated with the system.

9) **Statewide Conference Calls** – DPH, via a contract with Verizon Conferencing, can establish a statewide conference call with hospitals and other healthcare partners within 30 minutes. DPH uses these conference calls annually when addressing the hospitals regarding ASPR funding and mid and end year reports. DPH also used the calls, with great success, during Hurricane Katrina.

10) **GETS/WPS** - DPH has issued GETS and WPS cards to all hospitals, CMED centers and EMS Regional Directors. In addition, DPH has obtained and distributed GETS cards for every long-term care facility in Massachusetts. Facilities may use these cards if normal landline and cellular connections experience a call overload. DPH has registered each hospital's DPH-issued cellular phone with the National Communications Systems' WPS program, enabling wireless priority access in the event that lines are inundated and overwhelmed. DPH informed long-term care facilities on how to register with the WPS program and plans to obtain GETS cards for each assisted living facility, working with Executive Office of Elder Affairs (licensing agency) and the Massachusetts Assisted Living Association.

11) **DPH Hospital Capacity System** - DPH can push messages to hospitals and CMED centers to use the Hospital Capacity System (described in the next Capability) to monitor diversion, report current and surge bed availability, and enter needed medical equipment and supplies.

12) **CMED VoIP System** - Once installed (equipment and service purchased and diagnostic lines are installed), CMEDs may use Voice Over Internet Protocol (VoIP), a technology that allows one to make telephone calls using a broadband Internet connection instead of a regular analog phone line. The CMED VoIP system will be a closed data network that will provide a redundant mechanism of real-time communication between CMED centers, important during an MCI or prolonged health event where ambulance transports would cross regional boundaries.

13) **VHF Radios** - Radios on a VHF repeated system, with statewide coverage, serve as an interim mutual aid radio network for the deployment of the 58 ambulance task forces. These radios meet some, but not all of the SAFECOM, P25, set of standards. The radios are channel-spaced at 12.5 kHz, per FCC SAFECOM, P25, requirements. However, the

radios are not digital, encrypted nor are they enabled with over the air reprogramming. The system on which the radios work is a wideband 25 kHz system. The system does not accommodate digital nor over the air reprogramming.

14) **Regional Medical Coordination Center (RMCC)** – DPH and central Massachusetts healthcare community piloted this concept, addressing Tier 2 and 3 events. The MSCC handbook discussed the importance and use of medical coordination centers. Central Massachusetts activates the RMCC during large-scale events to help coordinate the movement of patients to hospitals and with the forward movement of patients to outlying facilities from incident impacted healthcare facilities. The RMCC plans to expand its role include evacuation coordination of long-term care and assisted living facilities in the region.

Needs Statement

1) **Maintenance of Hospital Emergency Preparedness and Response Communications Methods and Outreach to Other Healthcare Partners**

DPH has developed a communications protocol and system which includes the use of emergency flash drives, emergency preparedness listservs, a Sprint/Nextel and Verizon push-to-talk network grouping all hospitals and EMS by their preparedness regions, GETS/WPS priority access cards, satellite phone network, VHF radios for ambulance task forces, alerting network, hospital capacity website and Voice-Over-Internet Protocol (VoIP) linkage for C-MED centers. DPH needs to maintain all projects and expand others by adding contacts in additional groups, such as those that would respond to at-risk populations in an emergency and those in Tiers 5 and 6, interstate and federal contacts, as identified in the Medical Surge Capacity and Capability Handbook. There is an ongoing need for trainings and exercises to maintain responders' system proficiency. DPH must also conduct regular outreach to maintain current emergency contacts lists and to open emergency notification to all emergency response staff, i.e. long-term care and assisted living facilities, dialysis centers, individual EMS services, neighboring States' healthcare emergency responder contacts and those at the federal response level in order to maintain a robust communications system for all Tiers. There are ongoing monthly and device replacement costs associated with the elements of the communications network. Funding from this cooperative agreement is necessary to maintain a comprehensive system that meets all ASPR expectations.

2) **Statewide Communications Interoperability Plan**

A number of characteristics have made the development of a statewide communications network a challenge in this state. Massachusetts is a Commonwealth, characterized by relatively weak or non-existent regional government structures, combined with dominant (Home Rule) City or Town authority and concomitant stand-alone public safety and public health IT and radio systems. Independent RF command channel interoperability initiatives are occurring with independent statewide fire and evolving EMS-Hospitals-Boards of Health communications networks operating or in development. There is no

single statewide discipline-agnostic entity planning and implementing a consistent Interoperability Vision, Goals, Objectives, and, most importantly, unifying Initiatives. No information sharing architecture exists in Massachusetts that defines the specific information exchange requirements between all Stakeholders as a function of the incident, emergency, or disaster.

Federal initiatives have long sought state, regional and local collaboration, with the necessary wide-area and statewide standard approach clearly the responsibility of the state. In this regard, the Department of Homeland Security (DHS) has required that all states develop and adopt a statewide communications interoperability plan. Massachusetts has developed the Statewide Communications Interoperability Plan (SCIP) that is compliant with the interoperability continuum specified by SAFECOM. The EPB Directors sits on the Statewide Interoperability Executive Committee (SIEC), which oversees implementation of the SCIP.

3) **Regional Medical Coordination Center (RMCC)** – Central Massachusetts established a Regional Medical Coordination Center using funding from ASPR and Homeland Security cooperative agreements. There are ongoing telecommunications costs for the phones lines that would be operational during the RMCC activation in a large-scale event. The RMCC would use these lines to coordinate the movement of patients to outlying facilities from incident impacted healthcare facilities, including long-term care and assisted living facilities. Funding from this grant cycle is necessary to maintain the RMCC telecommunications lines.

4) **Telecommunications Service Priority (TSP) Program** –DPH has done preliminary work to address the new ASPR expectation that, for the first time in Hospital Preparedness Program history, awardees are required to identify hospitals or healthcare entities for participation in the FCC TSP. The guidance indicates that awardees will provide a list of facilities currently participating in TSP, noting whether the facilities used federal funds to achieve this purpose.

Over the past few weeks, since distribution of the grant guidance and subsequent review of this new requirement, DPH successfully identified three healthcare entities that have registered with TSP (Cambridge Health Alliance, Partners Healthcare and Lifeline Medical Alert Service). However, DPH knows little about these organizations' history, funding and extent of involvement with TSP. The limited timeframe from the distribution of the guidance and deadline for the application submission has limited DPH in collecting additional information regarding specific locations and telephone lines identified for telecommunications restoration. There are complexities in information gathering with a short turnaround as Cambridge Health Alliance and Partners HealthCare are healthcare systems with over 30 organizations including hospitals, community health centers and local public health offices. DPH is in the process of contacting the various network telecommunication directors of each entity for further detail regarding their organization's participation in the TSP program.

DPH will need details from ASPR regarding the TSP program to meet this new requirement. Healthcare entities will not register with TSP unless ASPR provides explicit TSP program information including the following: lists of chosen restoration providers contracted with the TSP program, explanation of how those providers are chosen and whether the list is generated through an annual federal competitive bid process, duration of the agreement to participate in the TSP program, specific agreement language and details regarding the parties involved in the agreement, exact costs per registration and charges per month/per identified line, duration of the contract that specifies these rates, scope of service for the line restoration provider detailing their exact responsibilities and clarity regarding legal liability, particularly damage liability should an organization agree to allow a restoration provider in its facility with access to vital telecommunication lines. DPH is disadvantaged in meeting the requirement without this information and needs ASPR to provide these specifics for forward movement with the new TSP project.

Program Outcome Objectives

The overall goal of Massachusetts's interoperable communication systems is to equip participating hospitals and other healthcare entities, to the extent possible, with communication devices which allow horizontal and vertical communication with other emergency responders. The system must be redundant and should provide the ability to exchange voice and/or data with healthcare partners on demand and in real-time. A robust communications system will aid emergency personnel with all-hazards response.

Objective #1: Maintain All Communication Systems Established Through the Hospital Preparedness Program.

Objective #1a: Maintain Current Emergency Contact Flash Drives

DPH and the Massachusetts Hospital Association (MHA) have issued Emergency Preparedness flash drives to hospital and other emergency preparedness partners. DPH directed emergency personnel to place the drives either in their institution's Emergency Operations Center or in possession of staff responsible for disaster mobilization. These portable, rugged, keychain drives contain emergency contact directories, other emergency preparedness information and internet-based links for the systems used to manage healthcare assets during an emergency. Having this information readily available on portable flash drives will provide the DPH, Massachusetts Hospital Association (MHA) and their healthcare partners with convenient access to emergency contact information. When this information is easily accessible, potential delays in the mobilization of emergency preparedness personnel in the event of a disaster or emergency are minimized. DPH has ensured that the drives auto lock when removed from the computer and a password is required to unlock the secured data. DPH and MHA must continue to update these drives and train those in possession of this device in downloading updates as they arrive. At a minimum, MHA updates the emergency contacts lists biannually. This activity is ongoing.

Objective #1b: Maintain Updated Emergency Preparedness Listservs and HHAN Groups

DPH uses the emergency preparedness and response listservs and the HHAN to notify emergency response staff of incidents and of information of interest. DPH has populated these lists with the email addresses of hospital emergency preparedness staff, regional coordinators, VA/National Disaster Management System staff, the Massachusetts Hospital Association, the MA League of Community health Centers, State Emergency Operations Center, public safety, DPH staff and other healthcare partners. DPH continues to add participants to the listserv and HHAN and makes them available as a communications device for all those emergency preparedness partners that respond to public health alerts. Both systems offer message confirmation, which helps DPH monitor notification success and failure rate and allows for troubleshooting and follow-up with users. DPH has been active in adding all long-term care and assisted living facilities to these systems. Last grant cycle, DPH added all ASPR funded cellular/push-to talk text messaging numbers to a listserv. If an incident occurs after normal business hours, DPH response staff has been equipped with wireless computers and handhelds so DPH can push out alerts to the listservs with one user-friendly and easy-to-remember email address from any email system. The HHAN is a web-based application that users may access from any computer. HHAN participants have populated their profiles with their contact information, including home phone, cellular, email, work phone, etc. The HHAN will use this information when attempting to alert individuals and will continue through the various contact methods until users confirm receipt of the alert. DPH assigns HHAN users to one or more roles. This enables DPH to alert users by the function(s) they perform, rather than search for and select each individual who needs to receive an alert, saving valuable time in emergencies. In addition, DPH assigns security and permissions with the HHAN to roles or role groups, rather than to individual users, for easy organization and maintenance. DPH must continue to update these lists and plans to build-out for additional groups, particularly those that would respond to populations with special needs and response staff from neighboring states. DPH incorporates both the listserv messages and the HHAN in notifying hospitals and CMEDs of a monthly available bed count. This activity and daily outreach are ongoing. Funding from this grant cycle is necessary to maintain the listserv and HHAN licenses.

Objective #1c: Maintain and Update Emergency Preparedness Nextel/Verizon Systems

DPH uses the Nextel/Verizon push-to-talk as redundant methods of communication to send alerts to hospitals other healthcare partners. DPH has issued hospitals and other healthcare partners Nextel or Verizon push-to-talk phones that DPH has incorporated into a specific HHAN group. DPH has also grouped the phones' push-to-talk radio functionality by hospital region. This is yet another redundant form of hospital communication. During the next fiscal year, DPH proposes to replace the handhelds as DPH and MHA originally purchased these units in 2004. The new Sprint/Nextel technology offers greater coverage area as the new phones access a greater number of cellular towers than the original Nextel phones had. Nextel's coverage has been a common user issue and the new Sprint/Nextel technology should address many of the coverage gaps. DPH, with MHA, must, distribute new equipment and continue training and drilling of the phones' functionalities, particularly the talk groups where all the hospitals, DPH, CMEDs and EMS Regional Directors in a hospital region can communicate at once. These activities and outreach are ongoing. DPH and MHA continue to work closely with Sprint/Nextel and have successfully negotiated a significantly discounted charge per replacement phone as DPH and MHA placed all the ASPR funded

cellular phones on one large account. DPH drills the phones on a weekly basis, testing the text messaging during the monthly bed count and the radio talk groups all other weeks. Funding from his grant cycle is necessary for the maintenance and replacement of all cellular technology distributed by the HPP program.

Objective #1d: Assist All Participating Hospitals and C-MED Centers' Install, Operationalize and Develop Usage Protocols for Emergency Preparedness Satellite Phones

DPH satellite phones have been purchased and issued to all participating hospitals, EMS dispatch centers, EMS Regional Directors and DPH and would be used as a last resort should regular forms of communication become inoperable. Hospitals received a fixed rooftop antenna model so that staff can use the phone inside their facility, with suggested install in their hospital EOC. Satellite phones will help facilities communicate if isolated and without power. DPH purchased Mobile Satellite Ventures (MSV) units for key DPH, MHA, and CMED emergency response staff. MSV satellite units have talk group functionality, thus adding a level of redundancy to this portion of the communications system. Most hospitals have completed the hardwiring of their fixed units. Some are waiting for other rooftop installations for cost savings for their ASPR funding. During the next fiscal year, DPH and its satellite and project coordinator vendors, Globafone and Commonwealth MS (formerly SSG), will continue to assist hospitals with their hardwire installation, troubleshoot connectivity issues and will distribute roaming devices to all users. The roaming device indicates when satellite signal is strong and the satellite is overhead for maximum call completion. DPH and its vendors will distribute equipment and train hospital communications staff on installation at the regional hospital meetings. DPH tests the satellite phones on a quarterly basis. DPH distributes call completion rates to users so that DPH and its vendors may follow-up on any issues. Funding from his grant cycle is necessary for the monthly charges associated for the satellite phones distributed by the HPP program.

Objective #1e: Operationalize Voice-Over-Internet-Protocol System

Voice Over Internet Protocol (VoIP) is a technology that allows one to make telephone calls using a broadband Internet connection instead of a regular (or analog) phone line. DPH, with its project coordination vendors (MHA and Commonwealth MS) has recently purchased equipment and service to create a closed data network that will provide a redundant mechanism of communication between the seven Massachusetts CMED dispatch centers. Currently, Verizon is installing VoIP lines at the seven locations. DPH will add VoIP to the communication protocols and, with CMED assistance, will develop protocols for CMED to CMED communication during and MCI or any incident involving multiple EMS regions. VoIP will provide another means of communication for the DPH, EMS and hospitals to manage resources needed to respond to a mass casualty or prolonged health incident. C-MED centers should have VoIP hardware installed by Fall 2008. When operational, DPH will add VoIP tests to its monthly drill schedule as a measure of the systems' functionality. Funding from this grant cycle is necessary for the monthly charges associated with VoIP service for the seven CMED centers.

Objective #1f: Assist Central Massachusetts Maintain and Expand Regional Medical Coordination Center (RMCC)

The RMCC, used for Tier 2 and 3 events, helps coordinate the movement of patients to hospitals but can also help with the forward movement of patients to outlying facilities from incident impacted healthcare facilities. DPH and long-term care and assisted living facility licensing agencies and groups request that the RMCC's role expand to include its use during a nursing home or assisted living facility evacuation in the region.

Objective#1g: Conduct Inventory of Amateur (HAM) Radios
DPH will poll all participating hospital and other healthcare partners of their HAM radio capabilities including equipment and licensed operators. DPH will confer with the Massachusetts Emergency Management Agency (MEMA) to determine if any protocols or agreements are in place with hospitals and other healthcare entities and the statewide Amateur Radio Emergency Service (ARES) – licensed HAM radio users that have volunteered their qualifications and equipment for communications duty in the public service when disaster strikes. From this information, DPH will then assess the need for additional radios and whether DPH should develop protocols for hospital HAM use during an emergency.

Objective #1h: Identify Three Hospitals or Healthcare Entities Per Sub-State Region for Participation in the FCC's Telecommunications Service Priority Program (TSP)
DPH will poll all participating hospitals and other healthcare partners of their TSP status, inform and educate the hospitals of the program, identify and recommend three hospitals per hospital emergency preparedness region and will determine the hospital's willingness to participate in the TSP program.

Objective #2: Participation in Statewide Communications Interoperability Plan (SCIP) Development

FFY08 ASPR funding will continue to support the Department of Public Health's participation SCIP to provide strategic direction for all future state, local and regional interoperability projects and purchases in the Commonwealth. As a result, the State Interoperability Executive Committee will work with all key stakeholders to ensure that the individual interoperability plans that exist at the state, regional and local level will be in unison with the five-year plan as well as adhere to DHS SAFECOM requirements, including NIMS compliance. DPH is actively participating in this process, representing the hospitals, EMS and public health disciplines, and will share information about SCIP implementation activities with hospitals and other healthcare partners.

National Hospital Available Beds for Emergencies and Disasters (HAvBED)

Current Status

The Massachusetts Department of Public Health has an operational bed tracking system compatible with the HAvBED data standards, definitions and operational requirements, as identified in Appendix D of the 2008 guidance. Therefore, DPH currently meets bed status reporting, but must maintain the systems established in previous years in order to remain compliant. DPH has chosen to use existing systems to collect hospital bed data and enter the HAvBED web-portal manually when requested by ASPR. However, project plans are to transfer required data to the HAvBED server using the HAvBED EDXL communication schema. This work will be completed in this year's ASPR cooperative agreement cycle.

Training and exercises are necessary to maintain system and user operational capability and capacity. DPH hospitals can enter HAvBED bed counts directly on the DPH web-based system. Recently, DPH added add/modify/change bed category functionality where aggregates of bed data, as well as totals by hospital and emergency preparedness regions, are available on this system. DPH has set the default categories to the HAvBED definitions. In addition, Massachusetts hospitals can report various surge levels of the HAvBED bed counts. The DPH system can also collect the following surge levels of the HAvBED definitions:

> Level II - Staffed beds that could be made available by discharging or transferring patients, or through the cancellation of elective procedures, the use of PACU's and Endoscopy suites, or other strategies.
>
> Level III – Vacant, un-staffed beds that could be made available within 24 to 72 hours of request.
>
> Level IV - Overflow beds in non-traditional areas of a hospital such as lobbies, cafeterias that could be made available within 72 hours to 7 days of request.

DPH conducts monthly Level 1 bed count (an immediate tally of vacant staffed beds) drills to ensure hospital staff proficiency with the web-based system. DPH reviews drill results with hospitals and troubleshoots any reporting issues to increase use of the system. DPH is in the process of expanding this system to incorporate additional information, such as emergency department capability, that will assist those making transport and other emergency response decisions during a mass-casualty or prolonged health incident and patient surge. The information will offer a more comprehensive overview of hospital capacity status with easily accessible data.

Needs Statement

Funding from this grant cycle is necessary to provide technical support and programming assistance for all of the categories and capabilities listed below.

1) **Emergency Department (ED) Care Capability** – Currently, hospitals and the CMED centers report hospital diversion and, when requested, bed counts and other inventories via the DPH Hospital Capacity Website. DPH, hospital and EMS groups have identified the need for an ability to collect ED capability to treat patients, ED boarding, and hospital discharge status separately from the HAvBED counts. ED status should be reported electronically and in real-time. All of these elements, together with bed counts and ED diversion status, will assist responders to move patients appropriately during a medical surge.

2) **Failover Server** – The current system has a single firewall and a single server, which leaves the system susceptible to a single point of failure. A new backup server or agreement with a partner agency to host a mirrored backup site must be added to ensure connectivity should one server become inoperable.

3) **Automated Notification -** Integration with the Health and Homeland Alert Network (HHAN) and the ability to receive RSS feeds of crucial hospital capacity information is a priority. Currently there is no automated integration of Hospital Capacity System and the HHAN, nor is there a mechanism for the system to update users of crucial hospital status information. Currently, DPH must manually push messages to its healthcare partners regarding hospital diversion and capacity.

4) **Integration with the Statewide Emergency Operations Center (SEOC)'s WebEOC** – DPH integrated the homegrown bed-reporting system with that of Boston's Emergency Management Agency WebEOC. DPH must work with the Massachusetts Emergency Management Agency to integrate the State's WebEOC with DPH systems so that hospitals can access all pertinent emergency response systems during an MCI or prolonged emergency resulting in medical surge.

5) **GIS Mapping Integration** – At present there is no user-friendly data mapping abilities to the Hospital Capacity website. Mapping abilities will assist those charged with directing assets and patients during medical surge.

6) **Automatic Transfer of Available Bed Data** – A contracted systems programmer must write and implement code using the HAvBED EDXL Communication Schema to meet the objective of MA automatically transferring available hospital bed data to the national system when requested by the federal agencies during a catastrophic event requiring the movement of patients to Massachusetts hospitals.

Program Outcome Objectives

The overall goal of Massachusetts's efforts under the HAvBED reporting sub-capability is to enable hospitals and EMS to report real-time elements of hospital capacity in order to assist healthcare partners in making the best transport decisions possible when managing mass casualty incidents, patient surge events, and even every day emergency system activity. DPH will submit

the required data using either a manual entry of the data to the federal HAvBED portal (current ability) or via an automatic transfer using HAvBED EDXL Communication Schema.

Objective#1: Automatic Transfer of Available Bed Data to Federal HAvBED System
DPH's site programmer will write and implement code using the HAvBED EDXL Communication Schema that pushes Massachusetts available bed data from the Hospital Capacity Website to the national HAvBED site.

Objective #2: Add Emergency Department Capability
Since emergency department overcrowding is a challenge for many hospitals in Massachusetts and since ED overcrowding leads to hospital diversion status and complicates the job that CMED centers perform when directing ambulance transports, DPH plans to build out the Hospital Capacity Website by adding a reporting feature for Emergency Department Care Capability. Each hospital would be able to log-on to the system and enter their ED's ability to accept red, yellow and green patients should a mass casualty or prolonged health event occur. Being able to view ED status would allow EMS agencies and the regional CMEDs to make more informed decisions about patient transport destinations. DPH will create a separate section of the website for ED Care Capability and hospitals will be able to enter numbers of patients to whom they could provide care according to the following triage designations:

- RED – Immediate treatment needed. Life threatening situation.
- YELLOW – Treatment needed but can be delayed. Situation is urgent but not immediately life-threatening.
- GREEN – Treatment may be needed, but injuries are considered minor and are not life-threatening. Person is ambulatory ("walking wounded").

DPH would then push this and other critical information regarding the incident and hospital ED care capability to users via the HHAN and RSS feeds mentioned below. DPH must conduct outreach and trainings to include all EMS services on the notification end of hospital capacity alerts. DPH believes this new feature that will be added to the Hospital Capacity Website will augment the HAvBED project and will further assist all parties by providing real-time situational awareness of ED care capability and overall hospital capacity, particularly during an incident where many patients would need to be moved via ambulance transport.

Discussions are taking place on whether to include discharge rates per shift as a reportable category. Those directing ambulance transports would use these elements of hospital capacity to determine where to send patients. If reported on a daily basis, these elements will also help hospitals avoid the routine use of diversion as an internal control of patient volume. DPH will incorporate ED Care Capability drills into its monthly emergency preparedness drill schedule and into any appropriate exercises that include a mass casualty response. Funding from this grant cycle is necessary for the monthly service charges for the Hospital Capacity Website's server and for the code programmer vendor, who would also perform the functions listed below.

Objective #3: Add a Failover Server
The current system has a single firewall and server, which leaves the system susceptible to a point of failure. DPH proposes to add a mirror site on the Boston Emergency Management

Agency's WebEOC server. There are two distinct phases in implementing the failover site, the first being the installation and configuring of database director, firewall and server software. The backup server should have a similar firewall protecting the system from unauthorized access. In addition, the failover site should use a Cisco Distribution Director to detect when the primary server is inaccessible. The Director automatically fails over to the mirror site. DPH will configure the mirror site with the same IP address, so that the switch is seamless to end-users. The second phase of this project will be installing and configuring the Hospital Capacity Website application and database to the new failover server thus creating a cloned system.

Objective #4: Simplify and Facilitate Notification and Alerting Process for Hospital Capacity Website's Users:

- **Integration with the Health and Homeland Alert Network (HHAN) and WebEOC Systems** – Integration of Hospital Capacity System, the HHAN and various WebEOC systems will allow automatic notifications from the Hospital Capacity Website, through the HHAN alerting mechanisms, to communication devices (mobile communication devices, email, fax) so DPH keeps key emergency personnel informed of current capacity and open bed status.

  Programmers for the HHAN, WebEOC and Hospital Capacity websites will integrate the systems in two phases: an investigative phase and implementation phase. Given that there is a channel open between the capacity application and the HHAN, it is possible to add alerts that go beyond capacity statuses and open bed quantities. For example, there could be a series of alerts should DPH request surge bed counts or supply tracking. Pages to collect this information exist, but are not routinely active. Should DPH activate them, the system will generate a series of alerts requiring all appropriate users to update capacity information online. DPH must also follow-up with HHAN training and exercises/drills for those hospital staff that report bed and other hospitals counts, but do not regularly use the HHAN.

- **RSS (Rich Site Summary) Feed** – RSS feeds provide web content or summaries of web content together with links to a full version of the details, making it possible for users to monitor a website in an automated manner rather than checking it manually. Users can read RSS content from their email with simple software called a "feed reader." The user subscribes to a feed by entering the feed's link into the reader or by clicking an RSS icon in a browser, which initiates the subscription process. The reader checks the user's subscribed feeds regularly for new content, downloading any updates that it finds. An RSS feed from the Hospital Capacity website would allow users to receive status updates such as the number of open beds at a particular hospital or region and a facility's diversion status. This feature to the Hospital Capacity Website will augment the HHAN integration, described above.

- **Mobile Device Support** – With the popularity of Blackberry and Smartphone devices, small screen data options would assist users of the Hospital Capacity site and this mobile technology to view crucial hospital information via a handheld device. DPH will incorporate small screen data options for users to download.

Objective #5: Add GIS Mapping

Mapping of hospitals, their diversion status and a drill-down to bed counts, ED care capability and medical inventories and supplies will assist DPH and EMS in everyday EMS transport and during an MCI or prolonged health event. DPH plans to create maps with pushpin graphic indicators for each facility. A user will be able to click on the pushpin and drill down to a screen that contains facility summary information including capacity status, staffed and surge bed capacities and available medical equipment and supplies. The pushpins will be color-coded to match ED status and to highlight various levels of concern. DPH or regional administrators (CMEDs) would be able to create new screens, in real-time, to summarize groups of hospitals by region, urban area or geographic proximity to an MCI, thus aiding key emergency preparedness and response and transport staff during an incident.

Massachusetts System for Advanced Registration (ESAR-VHP)

Current Status

DPH has implemented its ESAR-VHP program under the name Massachusetts System for Advance Registration (MSAR). The three major ESAR-VHP components: registration, credentialing, and deployment are being implemented in stages. A full time MSAR/MRC program coordinator (position currently vacant) oversees recruitment and retention tasks; a full time IT coordinator implements automation solutions for the program and oversees the database production environment. The MSAR staff works in conjunction with representatives of Massachusetts hospitals, Medical Reserves Corps, the Massachusetts Medical Society (MMS), state licensing boards, and regional and local public health to foster collaboration between MSAR and its stakeholders. MSAR is positioned to play a supportive role in a variety of scenarios that would require the ongoing support of health professionals in the Commonwealth, the region or at the national level.

During FFY 2007, the program coordinator continued recruitment efforts through direct mailings to professional groups, distributed MSAR Hospital Recruitment Campaign Kits in collaboration with the Massachusetts Medical Society (MMS) and provided MSAR presentations on request to various groups, including professional group meetings and hospital Grand Rounds.

DPH launched a web-based self-registration website in late 2006 that allows all interested volunteers to register on-line. While DPH continues to actively recruit physicians and nurses, the system has been expanded to include Physician Assistants, Pharmacists, Mental Health Counselors, EMTs, Paramedics, and Respiratory Therapists. MSAR, as designed, is capable of registering any type of volunteer in the healthcare field. As an inducement to volunteer recruitment, MSAR offers CEU credits for a required online training course to RNs, APRNs, and EMTs and CME credits for MDs. Data management workflows and reports have been implemented to provide detailed and summary information on volunteers. Initial deployment call logs have been developed.

As of 17 June 2008 the MSAR system has received 2339 volunteer applications; approximately half of these applicants are associated with a Massachusetts hospital. Approximately 2/3 of the applicants are registered nurses. A prototype of automated nurse credentialing with the Board of Registration in Nursing has been implemented. This functionality is capable of verifying the licenses of additional 600-650 nurses in the event of an emergency while the complete functionality is being developed. The ability to query the database and identify qualified volunteers was successfully tested in early June as part of an exercise that included hospital and public health participants from the Western Region, as well as EPB staff and state and local emergency managers.

MSAR has worked closely with MRCs to build collaboration and understanding between the two programs for both the leadership and members of the organizations. Discussion of sharing data, the registration portal, and credentialing information has taken place. MSAR attends and

presents at MRC-sponsored events. MSAR has sent MRC contact information and links to MRC recruitment websites for 546 volunteers who have requested MRC information.

Line item detail of the current state of the MSAR program mapped to ESAR-VHP compliance capabilities follows:

1.) Each State is required to develop an electronic system for managing volunteer data based on the data definitions and schema to be presented in the HRSA ESAR-VHP Guidelines. Electronic systems must be built to current industry standards for security and protection of sensitive information, and must include requirements for redundancy. These electronic systems must be able to:	
Feature	Status
a) Offer Internet-based registration. Information must be controlled and managed by authorized personnel who are responsible for the data.	Compliant/Implemented
b) Ensure that volunteer information is collected, assembled, maintained and utilized in a manner consistent with all Federal, State and local laws governing security and confidentiality.	Compliant/Implemented
c) Identify volunteers via queries of critical variables	Compliant/Implemented
d) Ensure that each State ESAR-VHP System is both backed up on a regular basis and that the back up is not co-located.	Compliant/Implemented

Each electronic system must be able to register and collect the credentials and qualifications of health professionals that are then verified with the issuing entity or appropriate authority identified in the *2008 Interim ESAR-VHP Guidelines*	
Feature	Status
1) Physicians	Compliant/Implemented
2) Registered Nurses, including Advanced Practice Registered Nurses	Compliant/Implemented
3) Pharmacists	Compliant/Implemented
4) Psychologists	In Progress
5) Clinical Social Workers	Compliant/Implemented for MFTs, MPHSWs, MHSASWs
6) Mental Health Counselors	Compliant/Implemented
7) Radiologic Technologists – have not received final guidance	In Progress (awaiting guidance)
8) Respiratory Therapists	Compliant/Implemented
9) Medical and Clinical Laboratory Technologists and Technicians – have not received final guidance	In Progress (awaiting guidance)
10) Licensed Practical Nurses	In Progress

b) Each electronic system must be able to assign volunteers to all four ESAR-VHP credential levels. Assignment will be based on the credentials and qualifications that the State has collected and verified with the issuing entity or appropriate authority.	Compliant/Implemented
c) Awardees must add additional professions to their systems as they are added to future versions of the *ESAR-VHP Guidelines.*	Compliant/Implemented

2. Each electronic system must be able to assign volunteers to all four ESAR-VHP credential levels. Assignment will be based on the credentials and qualifications that the State has collected and verified with the issuing entity or appropriate authority.

Feature	Status
All	Compliant/Implemented

3. Each electronic system must be able to record ALL volunteer organizations that a given volunteer is affiliated with, including organizations at the local, State, and Federal entities.

Feature	Status
All	Compliant/Implemented

4. Each electronic system must be able to identify volunteers willing to participate in a Federally coordinated emergency response.

Feature	Status
a) Each electronic system must query volunteers upon initial registration and/or re-verification of credentials about their willingness to participate in emergency responses coordinated by the Federal government. Responses to this question, posed in advance of an emergency, will provide the Federal government with a rough count of the potential volunteer pool that may be available from the States upon request.	Compliant/Implemented
b) If a volunteer responds "Yes" to the Federal question, Awardees may be required to collect additional information (e.g., training, physical and medical status, etc.).	**Training:** Compliant/Implemented **Physical/mental status:** In Progress (awaiting guidance)

5. Each State must be able to update volunteer information and re-verify credentials every 6 months.

Feature	Status
All	In Progress (awaiting guidance)

Needs Statement

Planning for the MSAR program is focused on the need for continued recruitment, retention of existing volunteers, program visibility, and additional relationship building with hospitals and MRCs as well as the identification of additional sources of volunteer recruitment. The following needs have been identified:

1) Addition of priority occupations (*APRNs, PAs, Dentists, EMTs, Paramedics, Pharmacists, RTs, RT Technologists, Cardiovascular Technologists and Technicians, Radiologic Technologists and Technicians, Surgical Technologists, Medical and Clinical Laboratory Technologists, Medical and Clinical Laboratory Technicians, Diagnostic Medical Sonographers and Veterinarians*)
2) Assess feasibility of contracting with a centralized credentialing service to facilitate more timely credentialing and relieve hospitals of the burden of verifying credentials for their hospital-based MSAR volunteers
3) Finalize activation protocols
4) Integrate MSAR with the Massachusetts Health & Homeland Alert Network (HHAN)
5) Work with MRCs to more closely align recruitment, training, and activation protocols for MSAR and MRC volunteers
6) Conduct exercises for activation/ testing of the system
7) Continued NIMS training for volunteers and access to both programs at the DelValle Institute for Emergency Preparedness and to ABLS trainings.
8) Ensure MSAR volunteers remain engaged in program through email communications (newsletter idea), optional training and educational programs, items of interest on website, etc.
9) Refine the MSAR/Hospital relationship
10) Continue efforts with Medical, Nursing and Allied Health licensing boards
11) Continue marketing, promotion and recruitment through collaboration with MMS and hospitals
12) Refine credentialing processes to include state background checks. Approval for this activity has been received from the appropriate state CORI board.
13) Prioritize areas of the program to meet the ESAR-VHP compliance requirements which will be included in updated ESAR-VHP Technical and Policy Guidelines, Standards and Definitions (Guidelines) when issued.
14) Automation of areas where transaction volume indicates automation is feasible while ensuring that less frequently used avenues of credentialing are implemented manually.
15) Work towards a more efficient manner for the electronic exchange of credentialing data
16) Develop internal hospital policies to integrate MSAR volunteers into hospital operations.

Program Outcome Objectives

The overall goal of the Massachusetts System for Advanced Registration is to develop and maintain a secure electronic database which has the capability to register, credential and assist in deployment of health care personnel who may want to volunteer to provide aid in an emergency, in the manner outlined by the federal Guidelines.

MSAR objectives are broken out as *program* objectives and *system* objectives. The latter includes both IT systems as well as the definition of related supporting business processes that may not be automated.

Objective #1: Expanded Volunteer Recruitment

Program Objectives:

- Reconfigure current program coordinator position to integrate coordination of MSAR and MRC activities in the state.
- Prioritize volunteer recruitment in critical healthcare fields (Physicians, Nurses, PA's, Paramedics). This will be staffed by the MSAR/MRC coordinator and IT coordinator constituting an ongoing task on their schedules. We will continue recruitment of new volunteers for all required occupations.
- DPH will again contract with the Massachusetts Medical Society (MMS) for continued support of MSAR. MMS has developed and distributed marketing materials for the program, and will assist in developing credentialing pilot.
- Expand MSAR partner base to facilitate expanded recruiting, especially with newly identified occupations as identified in the FOA and anticipated receipt of new guidelines. This effort will be staffed by the MSAR/MRC coordinator with tasks related to the development and distribution of marketing material sub-contracted to MMS. This will involve contacting and creating working relationships with organizations representing the newly identified occupations, including professional licensing boards, and developing MSAR recruitment campaigns with those organizations.
- Expand recruiting efforts to include translators and other volunteers that specialize in addressing the needs of "at risk" populations by partnering with organizations that represent these groups. One example of this will be sending recruitment materials to the medical translators trained in emergency preparedness by the Boston training institute, Del Valle or the Boston Area Health Education Center at the Boston Public Health Commission, over the past year.
- Add a field to track volunteers who may be able to assist in a mass fatality event.
- Through an Interagency Service Agreement with the Department of Mental Health, we will integrate the roster of trained crisis counselors with our ESAR-VHP/MSAR database.
- Increase visibility and understanding of MSAR and MRC programs in the volunteer population. DPH will continue to contract with Regina Villa Associates to provide logistical support for MRC Steering Committee and statewide advisory committee activities. Regina Villa and MMS will work collaboratively to support integration of the MRC and MSAR programs. In addition, the MSAR/MRC coordinator will continue to attend conferences, meetings of volunteer organizations, hospital grand rounds and similar events.

System Objectives:

- Continued operational support for the Web Site, databases and training systems. This is ongoing work on the part of the IT coordinator and the sub-contracted web hosting service. Continued adherence to service level agreements for system availability and performance.

Objective #2: Credentialing of Volunteers

Program Objectives:

- Continue credentialing existing occupations through licensing boards and Massachusetts hospitals. For FFY 2008, we will be working with the Massachusetts Medical Society to pilot possible collaboration with a credentialing service currently serving thousands of physicians in the Commonwealth.
- Work with professional licensing boards and other partners to credential new priority occupations.
- Implement background checks of our volunteers. This effort will be staffed by the MSAR/MRC program coordinator and DPH personnel responsible for background checks. Additional impact on the IT administrator may be expected but should be minimal. This will be measured by implementation of background checks, and appropriate storage and recording of information from those processes.

System Objectives:

- Add additional ESAR-VHP professions and ability to credential these groups and assign them to appropriate levels. These tasks will include any required data conversion and regression testing of the production system.
- Improve electronic data transfer to automate credentialing with both our local and federal partners. This will include completing the MA Nurse License credentialing that has been prototyped in a proof of concept as well as additional interfaces as these are release by QRS, the ASPR national vendor on credentialing that is currently brokering relationships with credentialing organizations.

Objective #3: Volunteer Retention

Program Objectives:

- Further develop volunteer retention strategy and implement retention programs. This effort will be staffed by the program coordinator with tasks related outreach including the development of newsletters and other materials sub-contracted to MMS. Successful implementation of programs and positive feedback from volunteer surveys will be used as an indicator of success.
- DPH is expanding training opportunities for MSAR volunteers to increase competencies, and enhance recruitment and retention of volunteers. DPH will contract with the Del Valle Institute for Emergency Preparedness in Boston, which responsible for the emergency preparedness and NIMS trainings to Boston area hospitals and responders. This funding will ensure access to DelValle programs for MSAR volunteers outside of Boston, and will support ongoing efforts to incorporate trained medical interpreters into MSAR.
- MSAR volunteers will be provided with information on NIMS trainings, and the database will track all trainings.

Objective #4: Continue Development of Activation and Deployment Protocols and Exercise

Program Objectives:

- The MSAR/MRC coordinator will work with hospitals to develop plans to integrate and deploy MSAR volunteers within healthcare facilities during an emergency or disaster. These plans will also cover personnel received through a regional hospital mutual aid agreement. DPH will explore the feasibility of using a central credentialing organization to reduce barriers to hospital participation, working with MMS to develop and implement a pilot credentialing project.
- Work with EPB exercise staff, hospitals, MRCs and local health to develop exercises to test activation and deployment of MSAR. Progress will be measured through the planning and successful implementation of trainings and exercises, the preparation of after-action reports, and follow-up system and program modifications based on the corrective action plans.

Systems Objectives:

- Define and develop enhanced query and reporting capabilities. This will include defining advanced queries to support activation and deployment as well as any other program management requirements.
- Define and develop system activation and deployment functionality including volunteer query functionality, initial contact and response management.
- Investigate integration with the HHAN and implement an MSAR/HHAN interface after a successful proof of concept.
- Develop exercises to test system availability and capacity in various scenarios.

Objective #5: Enhance the Ability to Meet the Needs of at Risk-Populations in an Emergency

Program Objectives:

- Develop MSAR recruitment materials and outreach strategies to recruit multi-lingual and ASL interpreters to expand the ability to meet the communications needs of at-risk populations. Recruitment will focus on registering volunteers with the following qualifications: Experience working with persons with physical, cognitive, or sensory impairments, American Sign Language interpreters, persons conversant with ASL, individuals who read and understand English and are able translate English into a foreign language, individuals experienced in formal language interpretation (either medical or non-medical).
- DPH will develop recruitment materials (brochures, traveling presentations) that specifically target individuals with the qualifications described above. Methods of dissemination will include: mail, radio, and presentations templates that can be adapted by local health departments to use.
- Engage in partnerships with the six schools in Massachusetts serving the deaf community (Beverly School for the Deaf, Clark School for the Deaf, Horace Mann School for the Deaf and Hard of Hearing, Learning Center for Deaf Children, Perkins School for the Blind and Willie Ross School for the Deaf) in an effort to facilitate recruitment of MRC/MSAR members.
- Develop guidance for local MRCs to aid them in accessing and utilizing interpreter and CART services during an emergency

- Develop curriculum for MSAR/MRC (and perhaps other first responders) on how to better serve individuals who have physical, mental or cognitive impairments, limited English language proficiency, unaccompanied minors, and individuals who use service animals.

Fatality Management

Current Status

In its 2007 application to ASPR, Massachusetts outlined an ambitious set of programmatic goals and objectives for fatality management planning. The objectives primarily revolved around three main categories:

1) planning by individual hospitals or healthcare organizations (Tier 1);
2) updating the state's Mass Fatality Plan; and
3) integrating the health sector planning (both at the local hospital level and at the state Department of Public Health level) with partners in other government disciplines (public health, public safety, and emergency management) and especially with private sector entities like funeral homes, crematories, and cemeteries.

Planning efforts have proceeded under the first category, and as part of their MOA with the state the participating acute care hospitals have written and submitted draft copies of a fatality management plan that is based upon a death rate equal to at least three times the hospital's average monthly death rate. In those draft plans, hospitals identified:

- current fatality capacity;
- process and personnel to certify deaths and inform next of kin;
- morgue capacity and the tracking procedures for belongings and bodies;
- staff to perform autopsies;
- other surge capacity issues for a mass fatality event; and
- developed strategies for culturally and religiously sensitive burial ceremonies

Planning efforts have been significantly delayed under the second category mentioned above, and funds have not been committed to date. The Commonwealth's Office of the Chief Medical Examiner (OCME) has undergone an extended time of instability during this reporting period, and a new Medical Examiner (ME) recently took office. That process delayed the formation of the State Expert Panel.[4] The selection of a contractor to support that State Expert Panel will occur following the conception of a signed agreement with the Department of Public Health. Pending a No-Cost Extension (NCE) submitted to ASPR, it is anticipated that the Department of Public Health will sign an Interdepartmental Service Agreement (ISA) with the OCME to begin planning efforts on July 1, 2008.

Planning efforts under the third main category mentioned above—integration with public health, public safety, emergency management and private sector partners—has proceeded slowly, although some positive steps have occurred. This delay is largely tied to the contractual challenges with the OCME, as integration was predicated, in part, upon providing a 'Fatality Management Toolkit for Communities' and in the provision of technical assistance as hospitals worked with their communities to integrate plans.

[4] The State Expert Panel will now be referred to as a Working Group dedicated to fatality management issues.

Needs Statement

Fatality management planning remains a high priority, and a concerted effort and substantial resources will be directed to ensure the completion, by the conclusion of the upcoming grant year, of 2007 objectives which are still in progress and to accomplish new or revised objectives for 2008.

During the grant period, revisions and updates will occur to hospital and to state fatality management plans at the Tier 1 level and at the Tier 4 level (Management of State Response and Coordination of Intrastate Jurisdictions).

To advance planning efforts at the Tier 2 (Management of the Healthcare Coalition) and Tier 3 (Jurisdiction Incident Management) levels, the Department of Public Health in cooperation with OCME will provide templates, toolkits and technical assistance to healthcare organizations and to their planning partners in public health, public safety, emergency management, and the private sector. Those templates and toolkits will be developed by a contracted employee retained through funding from the ISA between DPH and OCME. Technical assistance will be provided, to the extent possible, by the regional hospital coordinators who will take an active role in working with the contracted mass fatality planner and with the Mass Fatality Working Group.

Another objective for fiscal year 2008 will include a specific planning element, conducted in cooperation with efforts initiated under the CDC PHEP cooperative agreement, to address the cultural and religious issues involved in the identification, processing, storage and disposition of mass fatalities. These efforts will be undertaken in coordination with local public health authorities, the state's Department of Mental Health, religious leadership and Emergency Preparedness Bureau staff who work on the PHEP program.

The final two objectives for fiscal year 2008 will include the continuation of an effort, already in progress, to add fatality-related fields into MSAR and to incorporate mass fatality capabilities into drills and exercises in the state's Multi-Year Training & Exercise plan.

Program Outcome Objectives

The overall goal of Massachusetts's efforts under fatality management is to advance planning towards comprehensive, integrated mass fatality plans at the local, coalition, regional and state levels.

Objective #1: Contract to Assist State-level Planning Efforts
In order to ensure the capacity to conduct the necessary planning in an expedited and comprehensive manner, DPH will fund a contract to assist the Office of the Chief Medical Examiner (OCME) and the Massachusetts Emergency Management Agency (MEMA). The planner will review the Massachusetts 2004 plan, conduct a comprehensive review of existing plans from other states and countries, provide a report outlining gaps and recommendations, and undertake the revision/re-creation of a comprehensive fatality management plan.

He/she will work alongside the Mass Fatality Working Group in the preparation of templates and toolkits to assist hospitals and their local partners with integration of fatality management plans into the Comprehensive Emergency Management Plans (CEMP) of the cities and towns. The contract is expected to be executed on July 1, 2008 and activities under that contract will continue throughout the FFY 2008 grant period.

Objective #2: Creation of a Mass Fatality Working Group
DPH will establish, in concert with OCME and MEMA, a Working Group to address the challenges presented by mass fatalities. The working group will include all relevant partners, including other state agencies, local public health authorities and emergency managers, hospital representatives, and private sector partners including funeral directors, crematoriums and cemeteries. The Working Group will work alongside the Mass Fatality contracted planner to prepare templates and toolkits to assist hospitals and local partners with the integration of fatality management plans; these efforts are expected to continue throughout the FFY 2008 grant period.

Objective #3: Development of a Fatality Management Toolkit for Communities
The Mass Fatality contracted planner will revise the state plan, in consultation with the Mass Fatality Working Group and will create a toolkit for local fatality management. The toolkit will include templates, forms and protocols for integrating a fatality management plan into a jurisdiction's comprehensive emergency management plan (CEMP) and the Mass Fatality contracted planner will also provided support and technical assistance for that process. The final tool kit is expected to be complete by late 2008.

Objective #4: Needs of At-Risk Populations
Just as some populations have needs that require additional planning before an emergency, so too will some populations require special planning during a mass fatality event. Those populations could include individuals who are too poor to pay for burials; those with language or other communication barriers; religious and ethnic groups with particular needs around the storage, presentation and disposition of remains; and others. The Mass Fatality contracted planner will consult with a range of stakeholders including behavioral health specialists within DPH and the state's Department of Mental Health, grassroots community organizations, and client advocacy groups to support planning for at-risk populations, and he/she will include these considerations in the overall planning process. As a result of this collaborative planning, guidance will be developed to aid communities in developing fatality management plans that meet the religious, cultural and psychological needs of the surviving kin.

To further mitigate the psychological impacts of death and to facilitate the publics ability to make burial arrangements DPH, in collaboration with the stakeholders previously identified, will develop a public information guide to assist surviving kin in coping with death as well as information on responding to a death in the home.

The Mass Fatality contracted planner, in consultation with the state's Department of Mental Health, Emergency Preparedness Bureau staff who work on the PHEP program. OCME and the American Red Cross will perform a gap analysis on issues relating to the coordination of

information between surviving kin, medical examiners, mental health workers and the American Red Cross. This analysis will serve as the basis for future planning efforts.

Objective #5: ESAR-VHP

DPH will establish a field in the MSAR database to identify any personnel who may be of assistance with a mass fatality response. This activity is currently in progress, and will be completed by September 1, 2008. MSAR staff within the EPB will work with partners in hospital, healthcare organizations, local public health authorities, Medical Reserve Corps, and the aforementioned private sector partners (including funeral directors, crematoriums and cemeteries) to advertise for and recruit personnel with fatality-related specialties.

Objective #6: Exercise of Plans

Once fatality management plans have been integrated into the CEMPs at the municipal and state levels, plans will be tested as part of the state's Multi-Year Training and Exercise Plan. Additionally DPH will work with MEMA and the state's Executive Office of Public Safety and Security (EOPSS) to encourage the inclusion of a test of fatality management plans in drills and exercises conducted by emergency management and public safety disciplines.

Medical Evacuation/Shelter in Place

Current Status

DPH and the hospitals in Massachusetts understand the necessity and importance of evacuation and shelter-in-place plans. Hospitals have made significant progress in developing horizontal and vertical evacuation plans to respond to those situations when the environment is unable to support the care of patients.

Additional planning is needed at the Tier 2 level (Management of the Healthcare Coalition) to ensure cooperative efforts and an integration of plans amongst neighboring hospitals; further planning efforts are also needed at the Tier 3 level (Jurisdiction Incident Management) so that hospital evacuation plans include the input of, and support, from partners in local emergency management, fire department, local boards of health and long-term care facilities and ensure cooperative planning which meets the needs and safety of patients, visiting family members and staff in the hospital during an emergency.

All Massachusetts acute care hospitals are Joint Commission accredited, and are therefore required to have both horizontal and vertical evacuation plans in place. Over the last three years, several facilities in Massachusetts have had to implement all or part of their evacuation plans. From December 2005 to present, three acute care hospitals have had to evacuate patients to outside facilities due to a boiler explosion (Mount Auburn Hospital), a burst pipe (Metro West Medical Center-Natick), and a failed generator (Milton Hospital). Two long-term care facilities had to evacuate patients due to flooding (Mary Immaculate Hospital) and a chemical explosion in the neighborhood (New England Home for the Deaf). Two acute care hospitals have had to evacuate patient floors to other locations within their facility due to fires (Salem and Mercy). Two acute care hospitals and a long-term care facility (Whidden Memorial Hospital, Boston Medical Center, and the North End Nursing Home) had to prepare to evacuate their entire facilities due to neighborhood water main breaks, although evacuations turned out to not be necessary. As these events demonstrate there are a variety of factors that may lead to either a partial or complete evacuation of health care facilities. Acute and specialty care facilities in Massachusetts have shown that they are capable of evacuating their patients to outside facilities as necessary.

During 2007 and 2008, DPH collaborated with the DFS to create the "Practical Hospitals Evacuation Program" which brings hospital representatives to a two hour course that provides the knowledge, skills and techniques to safely evacuate patients. DPH will continue to support hospitals through their Joint Commission requirements to refine and exercise those evacuation plans. In the past several years, Regional Hospital Coordinators have worked with all of their hospitals to create and sign regional mutual aid agreements. These agreements include provisions for facilities to send and accept patients, staff and supplies. HPP staff has been working with the DPH's Health Care Quality Division and representatives from long-term care facilities to conduct planning and preparedness for nursing homes, including evacuation planning. Additionally, DPH through HRSA/ASPR funding has established redundant

statewide hospital communications systems, interactive web-based bed/resource reporting and tracking systems and 58 ambulance task forces consisting of a total of at least 290 ambulances.

On the individual hospital level, several of the hospitals have contracted with an outside expert consultant to assist them in creation of full building and specialty care unit evacuation plans. These facilities include hospitals in three of our six Regions (regions 2, 4C and 5).

Needs Statement

The major areas providing opportunity for improvement in hospital evacuation planning include: 1) Need for assessing the level of integration of current hospital evacuation plans with local, regional and statewide emergency evacuation planners. 2) Implementation of hospital plans that specify sheltering in place, horizontal evacuation, vertical evacuation, then a complete evacuation from the facility. 3) Continued training for hospital personnel on hospital evacuation ICS and safe vertical evacuation patient movement techniques. 4) Determining triggers that require hospitals to evacuate including notifications to CMED and DPH.

Hospitals recognize that evacuation planning involves public safety agencies. Hospitals must rely on those local public safety partners to ensure ingress and egress of ambulances, buses and helicopters; provide perimeter security and hazard control; assist in the physical movement of patients, movement and security of medical records; and provide many other elements essential to a successful evacuation DPH worked with hospitals over the course of the year to assess evacuation plans. Further planning needs to continue that integrate local, regional and statewide preparedness planning. Much of the activity conducted during this grant period will focus on regional integration of evacuation/shelter in place plans between hospitals, identifying gaps and developing strategies to assist the hospitals and local public safety and emergency management to improve integration of evacuation plans where needed.

Program Outcome Objectives

The overall goal of Massachusetts's efforts under the Hospital Evacuation/Shelter-in-Place capability is the refinement of hospital evacuation and shelter-in-place plans to ensure they are based on an integrated, unified community, regional and statewide response that ensures the safe and respectful movement or in-facility protection of all patients and the safety of personnel, visitors and family members impacted by a disaster or emergency situation.

Objective #1: Conduct a Gap Analysis

> Objective 1a: Community Integration – Using FFY 2008 HPP funding, DPH will identify gaps in hospital evacuation plans regarding successful integration into community and regional based preparedness plans and develop corrective action plans. The most effective way to test and evaluate evacuation plans is through simulated exercises. DPH will coordinate with the Exercise and Training team from the Emergency Preparedness Bureau to design, coordinate and evaluate a facilitated hospital evacuation exercise to be

held in each of the six hospital emergency preparedness regions. Invited participants will include hospital and local public safety officials, regional EMS, public health and local and regional emergency management partners. The format will be that of a facilitated tabletop with facilitation being provided by exercise planners.

Objective #1b: Regional and Statewide Integration - Gaps in hospital evacuation, community and regional preparedness plans regarding successful integration into multi regional or statewide preparedness plans will be identified. The regional facilitated tabletop exercises referenced in Objective#1a will provide a means for hospitals to evaluate their evacuation plans; local public safety to evaluate their response to a hospital evacuation; and DPH to evaluate the effectiveness of our regional hospital mutual aid plans. As evidenced by recent Hurricanes, floods and other events of major significance, it is essential to prepare for events that impact entire regions or multiple regions within the state. DPH is interested in conducting exercises that test cross regional capacity and capabilities. After Action items will be assembled and further discussed and addressed.

Objective #2: Provide Competency Based Training on Evacuations
DPH will continue to train providers in the hospital community on evacuation ICS and safe patient preparation and movement. The DPH training liaison to DFS will work with the DFS Fire Academy training infrastructure as part of the DPH/DFS ISA to develop and present two training classes related to Hospital Evacuation Operations.

During a hospital evacuation, hospital staff will be working side by side with local police, fire and EMS responders. Additionally, many non-clinical staff within hospitals such as security, maintenance, medical records and housekeeping will have critical roles in an evacuation. It is therefore important to create a class accessible to all levels and disciplines of hospital personnel as well as local fire, and EMS responders that will be called to participate in an evacuation incident. The most practical and efficient way to deliver a course to such varied audiences is to develop an instructor-training program that will enable DFS to develop a cadre of trained instructors able to reach our targeted audiences.

The Practical Hospital Evacuation Instructor Training Program: will be designed as a one day, 6-hour instructor training program. Upon completion of this program, participants will have the knowledge and skills to teach a 2-hour hands-on competency based evacuation training. Participants will learn and demonstrate the proper technique to safely vertically and horizontally evacuate patients as well as teach this tactic to their hospital personnel. Participants will also understand the necessity of interagency collaboration with hospitals, police, fire, and EMS during an evacuation. This course will be developed, piloted and offered six times this year.

The Incident Command System for Hospital Evacuation will be designed as a 2-day program including didactic and tabletop exercises. It will be designed for hospital, fire, EMS, and police who will be involved in the management of a hospital evacuation. This class will provide the target audience with an understanding of command operations during a hospital evacuation. Students completing the course will be able to describe the aspects of a hospital evacuation; explain the basic command procedures and ICS organizational structure; identify various resource levels, types, and capabilities used in hospital evacuation; identify critical factors and

issues that affect scene management; describe all unique operational considerations used during a hospital evacuation; describe all response operations phases associated with a hospital evacuation; and describe the technical evacuation expertise and equipment required for safe operations and effective incident management. This class will provide the tools for hospital personnel to develop or further improve a hospital evacuation plan with an interagency approach including evacuation ICS org. charts and sample job action sheets. As a pre-requisite, students will need to have completed ICS 200 prior to taking this class. This course will be developed this year, and offered in FFY 08.

Objective #3: Shelter-In-Place Plans

DPH will collaborate with hospitals to create tiered evacuation plans that identify sheltering in place plans, horizontal movement, vertical movement, and then full evacuation. Lessons learned over the course of several years demonstrate that internal emergencies are far more likely to warrant such internal evacuation. Outside events will trigger plans for hospitals to shelter in place. Hospitals should develop a matrix to determine the appropriateness of evacuation vs. sheltering in place.

Partnership Development

Current Status

DPH has encouraged the formation of hospital and healthcare "partnerships" at the local and regional level. Massachusetts currently has one active partnership; the multi-disciplinary Partnership for Effective Emergency Response (PEER) was established in August 2007 in three of the state's hospital preparedness regions, an area which includes the city of Boston and a number of surrounding communities in the Cities Readiness Initiative (CRI) metropolitan statistical area. PEER includes participating organizations that span 62 communities and it covers five health and medical disciplines—hospitals, local public health authorities, EMS agencies, long-term care facilities, and community health centers.

In the fall of 2007, PEER received one of the competitively funded Healthcare Facilities Partnership Program cooperative agreements from ASPR, and DPH has worked closely with this partnership project to encourage activities and efforts that complement the state's preparedness efforts, and enhance state planning under the FFY 2007 ASPR priorities. The inclusion of health and medical partners that receive very limited ASPR HPP funding has been one element of PEER's success, and DPH will work to support future efforts within PEER and in another region of the Commonwealth.

Needs Statement

During this funding cycle, all awardees must ensure operational partnerships/coalitions that encompass the CRI cities in the State plus an equal number of partnerships/coalitions that include non-CRI sub-state regions. To fulfill this requirement, the Department of Public Health plans to support two operational partnerships.

As a pre-existing partnership that received substantial ASPR funding (and just received a No-Cost Extension from ASPR until February 2009), PEER will be one of the state's two identified partnerships. DPH will continue to assist in and support PEER activities, and will provide additional funding to the partnership to support its efforts upon the conclusion of the NCE funding period.

DPH will provide funding and support to establish at least one (1) additional partnership in a non-CRI sub-state region; per the state's statutes and regulations, the process for determining the second partnership region within the state to receive additional funding will likely be conducted through a competitive bidding process.

Both partnerships shall plan and develop memoranda of understanding (MOU) to share assets, personnel and information. They shall also develop plans to unify management of healthcare during a public health emergency and integrate communication with jurisdictional command in the area. These MOUs shall be tested through tabletop exercises conducted as part of the state's Multi-year Training and Exercise Plan. Wherever possible, DPH will work with the staff and

stakeholders from the PEER project to assist the second partnership in its development process, utilizing lessons learned from PEER as well as templates, protocols and procedures for information sharing during emergencies that have been developed.

By the conclusion of the FFY 2008 funding cycle, DPH will submit the following information:

A. names of the two partnership/coalition;
B. locations of the partnership/coalition;
C. participant healthcare organizations and other partners; and
D. number and type of MOUs that exist.

Program Outcome Objectives

Massachusetts's efforts to encourage partnership development is intended to increase coordination and collaboration across health and medical disciplines, and between the healthcare sector and other preparedness partners (first responder agencies and emergency management) with the overall goal of unifying the response of healthcare organizations during a public health emergency.

Objective #1: Establish Second Partnership Program
Through a competitive bidding process, DPH will establish, fund and assist in the efforts of a second partnership to unify planning and response activities (including communication and overall management) across healthcare organizations.

Objective #2: Development of Memoranda of Understanding (MOU) within Partnerships
DPH will support and assist the state's two partnership programs with the development of MOUs to share assets, personnel, and information.

Objective #3: Test Partnership MOUs during Tabletop Exercises
DPH will actively participate with the state's two partnership programs during dedicated tabletop exercises, or during a tabletop component of a larger exercise series, to test their recently established MOUs for the sharing of assets, personnel, and information.

Level Two Sub-Capabilities

Alternate Care Sites

Current Status

All Massachusetts acute care hospitals have been actively participating in planning for alternate care sites since 2006. Hospitals began working in their regional planning groups to identify contiguous groups of communities that would plan together in order to respond under a pandemic influenza scenario. Because of the possible limitations to travel (disruptions in public travel, gas shortages) and the likely reluctance of patients to leave their immediate area (fear, children at home, or other local obligations), local communities were assigned to work in hospital-based clusters that were determined based upon pandemic modeling assumptions, geographic proximity and proportionality of the population to hospital capacity. Each of the hospital preparedness regions undertook this assignment, and then began to work with neighboring regions to assign communities on regional borders.

Hospital-based cluster planning has been the foundation for pandemic planning work in the Commonwealth, and will be a key component of broader all-hazards health care preparedness planning. Under a pandemic scenario, all communities will need to respond with their available assets, and without significant federal, state, or regional assistance. A cluster-based response including hospitals, local public health departments, municipal first responders, and other health care organizations establishes a responding coalition that is small enough to coordinate and manage on a decentralized basis, but large enough to provide for efficient allocation of shared responsibilities and resources. Pre-identification of clusters has allowed for impact projections on a defined population base, inventories of sub-regional resources, and pre-event community preparedness and education. Cluster- specific impacts have been provided to each hospital outlining the cumulative and peak projections for hospital level care based on the Commonwealth's planning assumptions.

Needs Statement

While much progress has been made, significant work remains to be done. During FFY 2008, EPB hospital preparedness staff will work with the hospital preparedness regions to address alternate care site and all-hazards surge planning issues, including:

1) Solidifying planning partnerships to ensure that all relevant disciplines are engaged and participating in planning activities.

The effectiveness and inclusiveness of cluster-based planning for alternate care sites still varies across the hospital preparedness regions. While some clusters have fully engaged multi-disciplinary planning partners, local public health and public safety partners have not been included in all activities. Work is needed to ensure that local public health is fully engaged and concerns about competing use of limited resources are addressed. In addition, focused outreach to state and local emergency management and public safety representatives is needed to ensure

that alternate care site planning is consistent with community comprehensive emergency management plans and incorporates necessary security and public safety components. The integration of public health and hospital preparedness activities within the Emergency Preparedness Bureau should encourage stronger hospital/public health collaboration, and the Bureau will work at the state level to facilitate involvement of emergency management and public safety partners.

2) Further development of all-hazards community-based med/surge planning.

To date, alternate care site planning has focused primarily on development of Influenza Specialty Care Units (ISCUs) designed to provide hospital level community-based surge capacity under the pandemic scenario. In a series of meetings held in the hospital preparedness regions, local and state partners in public health, public safety and emergency management have recently identified possible gaps in alternate care site planning, and advocated for an expanded focus to include a range of all-hazards alternate care site models. While many aspects of the ISCU planning completed to date will be applicable to all-hazards scenarios, further assessment and planning is needed in order to plan for and develop true all-hazards alternate care site plans.

Identification of resources to support the operation of alternate care sites remains an issue. The state legislature still has not passed legislation that would provide funding for equipment and supplies for alternate care sites, and strengthen liability protections for health care professionals and volunteers who would be needed to support alternate care site operations in any health or medical emergency.

3) Integrating the MSAR and MRC program activities to align recruitment, training, credentialing and other criteria to expand the pool of qualified, pre-credentialed volunteers who could serve in alternate care sites during health and medical emergencies.

The availability of qualified, pre-credentialed volunteers (health care providers and others) will be essential to operationalizing alternate care sites in response to pandemic or to other health and medical emergencies. In Massachusetts, the MSAR and MRC programs have developed along separate tracks, and that has resulted in confusion and conflicting expectations about the availability of volunteers. As local public health assets, MRCs have not always been fully included in alternate care site planning, and expectations of hospitals and local MRC leaders are not in synch. The MSAR coordinator has collaborated closely with MRC representatives to address concerns about competition for scarce volunteer resources, but additional work is needed to clarify the roles of MSAR and MRCs, incorporate MRC representatives fully in alternate care site planning, and harmonize MSAR and MRC recruitment, credentialing, and activation protocols and procedures.

Program Outcome Objectives

The overall goal of Massachusetts's planning for alternate care sites is to develop a statewide plan for local community-based medical surge capacity, for both pandemic and all- hazards events, and to ensure a timely, coordinated, and maximally effective response.

Objective #1: Ensure multi-disciplinary participation in community-based alternate care site planning**.**

In FFY 2008, The regional hospital preparedness coordinators will lead efforts to ensure that planning activities in the regions include representatives from all relevant disciplines necessary to develop and implement robust all-hazards alternate care site plans. The coordinators will partner with public health regional coordinators to ensure that local public health representatives are informed about and engaged in planning and exercise activities. EPB HPP staff will also work with regional representatives from the Massachusetts Emergency Management Agency (MEMA) to encourage involvement by local emergency managers so that planning decisions are consistent with local comprehensive emergency plans. Senior EPB staff will work with the Executive Office of Public Safety and the Undersecretary for Homeland Security to encourage ongoing participation by state and local law enforcement in planning activities. MRC representatives will be invited to fully participate in hospital and community-based alternate care site planning. Finally, regional hospital coordinators will work with community-based organizations serving elders, people with disabilities, economically disadvantaged, linguistic minorities and others who need additional assistance in the event to identify representatives of those communities who can participate in planning for alternate care sites.

Objective #2: Develop a continuum of scaleable all-hazards alternate care site models to address medical surge needs.

Building on the hospital-based cluster planning completed to date, EPB HPP staff will work with hospitals and other response partners in the hospital preparedness regions to identify and develop a range of all-hazards alternate care site models that address gaps in medical surge planning identified by individual hospital preparedness regions. It is expected in addition to community-based alternate care sites such as influenza specialty care units hospitals may also choose to handle surge through re-designation of existing hospital space and resources. Some hospitals are currently developing plans for on-site surge capacity, and EPB staff will work with them to develop scaleable templates, which will include NIMS compliant ICS charts and job action sheets, and integration of MSAR and MRC activation and coordination.

Regional hospital coordinators will facilitate planning activities to identify and address region-specific gaps and concerns as a part of the monthly regional hospital preparedness meetings, and will work with regional emergency management coordinators and local emergency managers to support the development of alternate care site plans that are consistent with local comprehensive emergency management plans (CEMP). These alternate care site planning activities will also include representatives of at-risk populations to ensure that models adequately address the needs of medically vulnerable at-risk populations in the event that alternate care sites are activated.

EPB HPP staff will also focus on identifying and developing linkages to community-based multi-specialty groups and health plans that could provide surge support in the event of a health or medical emergency. EPB staff is currently meeting with a non-profit, multi-specialty medical group practice providing care to more than 350,000 adult and pediatric patients at more than 20 offices across eastern Massachusetts. With 3,500 employees, including more than 500 physicians and 1000 other healthcare professionals, this medical group may play a primary role in providing

community-based care to its patients in the event of a pandemic or other public health emergency, providing surge relief to allow hospitals to devote resources to the care of individuals requiring hospital-level care. Plans are in development to provide a scaled response based upon the severity of the public health event, and will include the identification of possible triggers for operationalizing regional care sites.

Objective #3: Develop consistent policies and procedures to support recruitment, training, and retention of MSAR and MRC volunteers who will be available to staff alternate care sites.

EPB HPP staff will work to support collaboration between the MSAR program and local MRCs and to align program goals and activities to avoid duplication of efforts and minimize competition for limited volunteer resources. The MSAR/MRC coordinator will work with the MRC Steering Committee and the statewide MRC Advisory Committee to develop consistent policies and procedures for credentialing and activation of MSAR and MRC volunteers in the event of an emergency. The MSAR/MRC coordinator will work with hospitals and MRC representatives to explore credentialing issues and assess the feasibility of identifying 'hospital-ready' volunteers within local MRCs who would be pre-identified to provide support for hospital-based alternate care sites. In addition, DPH will continue to work with the Department of Mental Health to integrate their roster of trained crisis counselors into the state's MSAR database, and provide information to local public health and emergency managers on how to request and receive these volunteers.

Objective # 4: Develop and finalize Guidance for Liability and Altered Standards of Care.

DPH has convened an Alternate Standards of Care working group comprised of health care providers, ethicists, and emergency medical services providers. Co-chaired by the Commissioner of Public Health and the Dean for Public Health Practice at the Harvard School of Public Health, the group will work to achieve consensus on standards for altered levels of care that are central to the successful development of any alternate care site. The HPP legal consultant will help staff this committee and provide guidance to regional hospital coordinators and the MSAR/MRC coordinator on liability issues.

Mobile Medical Assets

Current Status

DPH has purchased thirteen (13) mass causality trailers; each of these trailers carries enough supplies and equipment to treat 50-75 patients per trailer. These Mass Causality Incident trailers are located at various ambulances services or fire departments through-out the state. When requested, the trailers will be brought to the scene of a large scale event or incident by the host ambulance service or fire department where they are stationed. Upon arrival at the incident location, the trailer will be positioned between the EMS treatment area and the transport/loading area; in this location the supplies are readily available for ambulance personal at the treatment area.

Ordering of supplies for restocking the trailer will be managed through the regional EMS offices. The regions will supply the host services with the MCI supplies in as practicable a time frame as is possible. Current MOAs allow the five local Emergency Medical Service regions to have restocking supplies shipped directly to the host services to decrease time it takes to restock the trailers. Replacement supplies will be identical to the original supplies on board each trailer. Additionally, the supply inventory will be routinely reviewed and changes made as is appropriate.

To ensure that Massachusetts remains in a constant state of readiness, periodic exercises are conducted that involves the notification and activation, of the MCI trailer including towing the trailer to the active incident location.

Needs Statement

While alternate care sites in existing buildings have been identified and planning is progressing to resource and staff them for an all-hazards event, or pandemic influenza, further planning is needed to ensure capability to receive a Federal Medical Station.

Program Outcome Objectives

The overall goal of Massachusetts's efforts to provide Mobile Medical Assets is to identify, at minimum, one site per region that is capable of hosting a Federal Medical Station.

Objective #1: Federal Medical Station
DPH will work with the Massachusetts Emergency Management Agency's ESF-6 workgroup to identify potential sites for a Federal Medical Station in each planning region where the trailer can reside.

Pharmaceutical Caches

Current Status

Under previous Hospital Preparedness Program grant funding years, 100% of participating hospitals developed pharmaceutical caches sufficient to cover hospital personnel (medical and ancillary), hospital-based emergency first responders and up to four (4) family members associated with their facilities for a 72-hour time period. DPH required hospitals under this grant to purchase antibiotics that are effective against certain Category A biologic agents (anthrax, plague and tularemia) and should be similar to the antibiotics stocked in the CDC's Strategic National Stockpile (SNS). The CDC-maintained antibiotics include doxycycline (~70% of stockpile), ciprofloxacin (~23% of stockpile) and amoxicillin (~7% of stockpile). Where ciprofloxacin is not the universal formulary fluoroquinolone antibiotic, the hospital's formulary fluoroquinolone may be substituted for the ciprofloxacin included in the CDC stockpile for meeting the minimum 23% coverage expectation.

It is the responsibility of each hospital to maintain these minimal levels of force protection and antidote capabilities. HRSA/ASPR funding is provided annually to hospitals and may be used for the development and maintenance of these pharmaceutical caches.

At present, updates of antibiotic inventories are made available as part of an annual hospital survey instrument. DPH also employs a web-based statewide hospital bed status, emergency department (ED) availability status and hospital material inventory tracking system which is updated as needed. Should a public health incident occur in the state or a region within the state, a HHAN message is generated requesting that hospitals immediately update the information on bed availability, ED availability, and/or inventory capacity. Pharmaceutical cache inventory status updates include antibiotics, antiviral medications, and antidotes. In addition, grant funds could be used to maintain the inventories as items become outdated

Needs Statement

Massachusetts has successfully built pharmacy cache capability mechanisms for all hospitals and healthcare institutions as noted above. DPH recognizes that improvements in this area are needed:

1. That hospitals will maintain minimum required pharmaceutical caches as described in previous grant funded years and that hospitals must consider additional caches to treat patients under FFY 2008 guidance.
2. Although the web-based DPH Emergency Department (ED) ambulance diversion system maintained by all hospitals with emergency departments is capable of accepting reports of pharmaceutical inventories from all participating hospitals, no formal protocols exist regarding the reporting of such inventories.
3. DPH needs to develop formal guidelines and instructions for hospitals to activate their institutional cache.

Program Outcome Objectives

The overall goal of Massachusetts's efforts for Pharmaceutical Caches is to develop and formalize the protocols that govern the management and reporting of hospitals' pharmaceutical information.

Objective #1: Development of a pharmaceutical cache operational plan
DPH staff will work with Regional Hospital Coordinators and representatives from the Department's Strategic National Stockpile program to assist hospitals in developing a Pharmaceutical Cache operational plan that assures storage, rotation and distribution of critical medication through the supply chain during an emergency for patients, healthcare providers and their families in a timely manner. The following pharmaceuticals may be included in the Cache:

- Antibiotics for post-exposure prophylaxis sufficient for three days of treatment
- Nerve agent antidotes and Mark 1 kits
- Antiviral drugs
- Medications and vaccines need for exposure to other threats (e.g., radiological events)

Objective #2: Establish protocols for web-based reporting of pharmaceutical cache inventory.
DPH is currently working with MEMA and representative from the state's Homeland Security Councils to develop and implement a statewide NIMS-compliant resource management database that, when operational, will provide a long term solution to tracking inventory and supplies, including pharmaceuticals held by hospitals, MMRS jurisdictions and others within their force protection caches. As an interim step, the web- based bed reporting system includes the ability to report pharmacy cache inventories. DPH HPP personnel can query hospitals to request inventories of specific items to be reported via the website in real time. The system is configured to allow DPH to expand requests "on the fly," adding up to 10 items as new columns to be queried with no additional cost involved. For instance it would be very easy to add reporting columns for doxycycline, ciprofloxacin, levofloxacin, amoxicillin, Cyanide Antidote Kits, Mark 1 kits, and Pediatric Atro-Pens, oseltamivir, zanamivir, or other medications of interest and ask hospitals to report the exact levels of their inventories. While there are no additional technologies or cost-based needs to make this reporting system effective, written protocols must be put in place to ensure effective and consistent hospital reporting of pharmacy cache inventory.

DPH Regional Hospital Coordinators will discuss on-line pharmaceutical cache reporting with their hospitals at monthly regional meetings. These discussions will be geared to determining whether there are operational barriers to implementing a voluntary reporting system and what information should be collected to best contribute to preparedness efforts. If proprietary concerns or other barriers are identified, EPB senior staff will work with participating hospitals determine how to achieve the necessary reporting.

Following these discussions, EPB staff will work in collaboration with representatives of participating hospitals to develop and distribute formal cache reporting protocols, policies, and procedures. DPH will conduct semi-annual inventory reporting via the web- site with notice provided to the hospitals. This will not only confirm par level inventories statewide but will also serve to exercise the web based reporting system

Personal Protective Equipment

Current Status

DPH has worked to ensure that hospitals are provided adequate personal protection equipment (PPE) to protect current and additional health care personnel during a chemical, biological, radiological or nuclear incident. Hospitals have used prior HPP funds through HRSA/ASPR to purchase Level B & C PPE suits in sufficient quantities., Hospitals have continued to increase par levels of Powered Air Purifying Respirators (PAPRs) and other necessary equipment to protect frontline hospital personnel. DPH has surveyed individual organizations to determine PPE stock levels and DPH HPP Regional Hospital Coordinators work with individual hospitals in their respective regions to ensure compliance.

In addition to the inventory of PPE located at the hospitals, DPH has purchased and deployed regionally 12 mass causality incident (MCI) trailers to be used by the first responders during a MCI event. The trailers are mobile and strategically housed in every region allowing for rapid deployment to anywhere in the state. Each trailer, in addition to containing standard MCI and EMS treatment supplies contains the following inventory of PPE:

Gloves: nitrile/powder free 100/box (Small) - 2
Gloves: nitrile/powder free 100/box (Medium) - 4
Gloves: nitrile/powder free 100/box (Large) - 4
Gloves: nitrile/powder free 100/box (X-Large) - 2
Visitor Spectacles (vented side shield glasses) - 25
N95 Masks (box of 20) Small - 2
N95 Masks (box of 20) Medium - 4
N95 Masks (box of 20) Large - 2
Tyvek suit (hood/booties) 25/case XXX-Large - 2
Tyvek suit (hood/booties) 25/case X-large - 2
Tyvek suit (hood/booties) 25/case XX-Large - 2
Hooded PAPR - 2

Needs Statement

The major areas providing opportunities for improvement include:

1) Confirm that hospitals use Level C PPE at a minimum to protect personnel.
During the HPP FFY08 grant year, coordinators will follow up with hospitals to determine different PPE level stock. Hospitals that do not have at least Level C PPE equipment should consider utilizing HPP funds towards meeting that requirement, once Level One Sub-Capabilities have been accomplished.

2) Confirm that the proper use of personal protection equipment is adequately understood by responders and receivers, both in the pre-hospital and hospital environment. Although we survey the quantity of PPE available, we also need to confirm that responders are competent and

confident in the use of such equipment. Currently the only confirmation DPH has regarding PPE competency is records of the number of students that have been trained through the DPH partnership with DFS. Obtaining minimum numbers of trained personnel will help DPH assess the states current readiness. DPH knows that more personnel have been trained in PPE use due to hospitals hiring independent contractors and using other programs like the Del Valle Institute for Emergency Preparedness to train personnel in PPE.

3) Need to further engage other hospital disciplines who would benefit from PPE training.
A wide variety of disciplines are currently trained in PPE use. DPH recognizes that most hospitals use housekeepers as their decontamination personnel. Most hospital personnel are not trained in PPE use except specific disciplines. DPH is interested in surveying hospitals to determine what disciplines are PPE trained. Engaging clinical personnel in PPE provides expanded frontline protection and continued care. DPH has seen a significant decline in enrollment of personnel attending DFS PPE trainings. Regional hospital coordinators will work with hospitals to encourage expanded training for disciplines not adequately trained in PPE.

Program Outcome Objectives

The overall goal of Massachusetts's efforts under the PPE activity area is to obtain an accurate and up-to-date assessment of Personal Protective Equipment (PPE) readiness for hospital and pre-hospital response organizations.

Objective #1: Assess the existing level(s) of personal protective equipment utilized by the hospital providers and other associated public health disciplines against the Massachusetts Statewide personal protective equipment strategy document. DPH will conduct a survey of hospitals to determine existing levels of PPE at individual sites. DPH is interested in ensuring that all hospitals are Level C trained at a minimum. Provided the hospital has achieved full compliance with all Level 1 priority capabilities, hospitals will be allowed to utilize ASPR funding to maintain or supplement their PPE stock as needed.

Objective #2: Enable hospital and pre-hospital responders and receivers to be trained in the proper, safe use of PPE
DPH will continue to provide competency based PPE training through our partnership with DFS in the development of delivery of PPE classes. The following courses will continue to be offered during this grant period:

- Hospital Personal Protective Equipment and Decontamination Program is a two-day, twelve-hour program for hospital personnel.
- EMS Personal Protective Equipment and Decontamination Program is a two day, twelve hour program for fire service, third service or private service EMS personnel.
- On-line EMS Hazardous Materials Awareness and Incident Command System Program is an on line web-based course, targeted for fire service, third service and private service EMS providers. This program has been revised to be NIMS compliant for the ICS 100 requirement.

- Hospital Personal Protective Equipment and Decontamination Refresher is a one-day, six-hour competency based refresher program, designed to review and evaluate key components of the full twelve-hour HPPE program.
- EMS Personal Protective Equipment and Decontamination Refresher is a one-day, six-hour competency based refresher program, designed to review and evaluate key components of the full twelve-hour EMS PPE program.
- Hospital Personal Protective Equipment and Decontamination Refresher Instructor Training Program: is a two day, twelve hour training program, targeted toward hospital educators who wish to provide their internal facility refresher program.

  Additionally, due to the high interest and effectiveness of train the trainer programs, DFS will add the following courses during this grant period:
- EMS Personal Protective Equipment and Decontamination Instructor Training Program: will be designed as a three-day, 18-hour program. Upon completion of this program, participants will have the knowledge and skills to teach the initial 2-day PPE/Decontamination training to EMS personnel.
- Hospital Personal Protective Equipment and Decontamination Instructor Training Program: will be designed as a three-day, 18-hour program. Upon completion of this program, participants will have the knowledge and skills to teach the initial 2-day PPE/Decontamination training to hospital personnel.

Objective #3: Engage hospitals to identify disciplines trained in PPE.
The survey being developed for the PPE cache will also ask hospitals to identify trained disciplines inside their organizations. This helps DPH target other groups that could benefit from PPE training. Healthcare providers are not adequately trained in PPE and DPH would like to engage hospitals in expanding the PPE program to vital front line healthcare providers.

Decontamination

Current Status

The statewide decontamination system is a partnership between DPH and DFS in conjunction with the local first responder agencies and their partnered hospitals. Ninety-one (91) mass decontamination units (MDUs) provide protection for the hospitals in the Commonwealth that have emergency departments. Each of these units has the capacity to provide decontamination for approximately 75-150 individuals per hour which translates into a statewide capacity of 6,900-13,800 individuals per hour.

The Massachusetts Statewide Mass Decontamination System was developed and designed to meet the goal of protecting the health care infrastructure from being impacted by an incident where victims are contaminated and present at a hospital.

Needs Statement

The Statewide Mass Decontamination Response System will continue to be funded through the hospital allocations; this funding ensures collaboration between hospitals and first responder agencies for training, exercises, restocking, deployment, set-up and use in an emergent event to maximize patient decontamination.

Statewide Mass Decontamination Plan activation and communication exercises will be conducted to evaluate the ability of communities and hospitals to implement the communications portion of the MDU activation plan. After-action reports will be generated to focus on elements of the plan that may require improvement.

Program Outcome Objectives

The overall goal of Massachusetts's efforts under decontamination planning is to ensure that adequate portable or fixed decontamination systems exists within the Commonwealth to manage adult and pediatric patients, as well as health care personnel, who have been exposed in a chemical, biological, radiological, nuclear, or explosive incident. Specific planning elements within this thematic area have been developed in accordance with previously determined HVA analyses.

Objective #1: Incorporation of Decontamination Component into Hospital and Community-Based Exercises
Hospitals, as well as municipal first responder agencies, will be encouraged to include and prioritize the testing of decontamination capabilities during drills and exercises as part of their multi-year training and exercise plans.

Objective #2: Cross-Training between First Responder Agencies and Hospitals
Hospitals and first responder agencies will continue to train collaboratively on MDU deployment and operational procedures to assure coordination, efficiency of response and operations that are compliant with the principles of NIMS and ICS.

Objective #3: Continue MDU Deployment During Real World Events

MDUs have been deployed, both in the field and at hospitals, during large pre-planned events, in addition to a number of deployments that were responses to real world events. DPH, DFS, and participating hospitals and first responder agencies will continue these deployment practices as appropriate.

Additional Considerations

Medical Reserve Corps (MRC)

Current Status

Medical Reserve Corps (MRC) units were first organized in Massachusetts in 2005 under guidelines from the U.S. Department of Health and Human Services, Office of the Surgeon General. Currently, there are more than 40 federally recognized MRC units in the Commonwealth; some serve individual municipalities while others have been organized regionally, to serve multiple communities. Most units have been organized through local boards of health or public health host agencies. These MRC units include active licensed health care professionals, retired HCP, and other volunteers who would provide administrative and logistical support in the event of a public health emergency. Recognizing the important of MRC volunteers to local public health and hospital response, DPH has allocated CDC and ASPR funds to support MRC activities.

Needs Statement

MRCs are a critical public health asset in Massachusetts, but have not generally been included in hospital preparedness planning and may not have been invited to attend regular regional hospital meetings. Many MRCs have successfully recruited hospital-based volunteers, and work is needed to ensure that MRC and MSAR resources are used effectively. Areas of improvement include:

1) Identifying local protocols for activation of MRC volunteers for deployment in events requiring additional credentialed volunteers;
2) Partnering MRC coordinators with hospital Emergency Preparedness Coordinators and Regional Hospital Coordinators; and
3) hospital support for MRC recruitment, credentialing and involvement in hospital-based exercises.

Program Outcome Objectives

The overall goal of Massachusetts's efforts and activities for MRC is to integrate MRCs into healthcare and hospital planning to address their role in providing surge support during large-scale emergencies and disasters.

Objective #1: Continue to Support MRC Recruitment
Hospitals have a large pool of healthcare providers that can register as MRC volunteers to support local public health response. Regional hospital coordinators will work with the EPB MSAR/MRC coordinator, MRC representatives, and hospitals to develop complementary strategies for recruitment of MRC and MSAR volunteers.

Objective #2: Activating Volunteers

EPB staff will work with local MRC coordinators and the MRC Steering Committee to develop written policy statements identifying procedures and triggers for hospital requests for activation of local MRC volunteers. In addition, EPB staff will work with MRCs, hospitals, and other response partners to align MSAR and MRC activation and deployment protocols. Regional hospital coordinators will facilitate inclusion of MRC volunteers in local and state-sponsored drills and exercises.

Critical Infrastructure Protection

Current Status

To ensure that healthcare organizations continue to operate under a variety of stressors, it is necessary for healthcare facilities to protect their critical infrastructure as defined by the National Infrastructure Protection Plan (NIPP). In previous grant years, hospitals have used portions of their grant funds to implant target hardening activities for access control, CCTV cameras, perimeter security systems, and critical power after all benchmarks and critical requirements were met. Hospitals have made significant progress in safeguarding their institutions, patients, staff and visitors.

Needs Statement

Under the Hospital Preparedness Program (HPP), hospitals may use necessary funds towards target-hardening activities after all other Level One and Level Two Sub-Capabilities have been satisfied. Funds delegated in this area will provide opportunities for hospitals to further secure their critical assets and continue to treat patients during an incident or large-scale event that requires rapid treatment for many people. Activities should be prioritized according to results from the hospitals' most recent Hazard Vulnerability Analysis and facility security assessments.

Activities in this area are, by their nature, enhancements at individual facilities but they also satisfy the HPP guidance's requirement to employ a regional approach to critical infrastructure protection. By operating under the same common framework of which objectives and thematic areas should be prioritized to ensure protection of patients and staff and building infrastructure, DPH will work with its hospitals to create a collaborative and incremental approach to enhancing security, resiliency and redundancy amongst healthcare organizations.

Program Outcome Objectives

The overall goal of Massachusetts's HPP-participating hospitals under Critical Infrastructure Protection is to provide sufficient protection of critical assets in medical institutions by ensuring that hospitals limit access, continue operations, and protect patients, visitors, and staff in the process.

Objective #1: Enable hospital to purchase equipment for protection of the hospital environment. Activities under this objective could include:

- Asset identification and protection.
- Purchase, installation, implementation, training, and maintenance of manual and automatic access control systems.
- Purchase, installation, training, and maintenance of surveillance and perimeter security systems, including CCTV cameras, access card or biometric systems, motion detection devices, access intrusion alarms, and electronic tracking systems.
- Purchase, installation, implementation, training, and maintenance of Notification and warning systems.

- Installation or application of blast and shock impact resistance at high risk access points.

Objective #2: Enable hospitals to purchase equipment and supplies for healthcare service preservation or restoration. Activities under this objective could include:

- Ensuring adequate back-up power generators.
- Supplying emergency power to critical systems including CMED radio systems, security systems, and Command Center systems.
- Equipment to support mass screening and isolation treatment areas.
- Equipment to ensure continuity of operations, including computer infrastructure protection and enhanced utility redundancy.

Objective #3: Ensure that Hospitals have the necessary equipment for force protection. Activities under this objective could include:

- Purchase, training, and maintenance of personal monitoring devices, particularly dosimeters.
- Purchase, installation, implementation, training, and maintenance of remote monitoring equipment, particularly for chemical and radiological threats.
- Force protection, particularly bollards at critical access points, Emergency Department, and Radiology service areas.

Work-plan and Timetable

Why	What-Objective	Who – Lead Staff Person	Where	When	Budget Info
Level 1 Interoperable Communication Systems	Maintain Current Emergency Contact and Flash Drive Information	Communications Coordinator/MHA Staff	DPH/hospitals	Ongoing – Q1-Q4	MHA contract
Level 1 Interoperable Communication Systems	Maintain Listservs and Alert Network Groups	Communications Coordinator/HHAN Coordinator	DPH	Ongoing – Q1-Q4	Monthly costs and any contribution to HHAN
Level 1 Interoperable Communication Systems	Maintain Nextel/Verizon Emergency Preparedness Cellular Network	Communications Coordinator/MHA/ Sprint, Nextel	DPH	Ongoing – Q1-Q4	MHA contract – monthly costs
Level 1 Interoperable Communication Systems	Replace 2004 Nextel Handhelds With New Technology	Communications Coordinator/MHA/ Sprint, Nextel	DPH	Q2 – Purchase and Delivery Q3 – Distribution and Training	MHA contract
Level 1 Interoperable Communication Systems	Maintain Satellite Phone Network	Communications Coordinator/Outside Vendors/Various Community Stakeholders	DPH/Hospitals	Ongoing – Q1-Q4	Monthly costs
Level 1 Interoperable Communication Systems	Distributing Satellite Phone Roaming Devices	Communications Coordinator/ Outside Vendors	DPH/Regional Hospital Meetings	Q1	Globafone – no charge – they are doing this to increase successful call rate.
Level 1 Interoperable Communication Systems	Operationalize Voice-Over-Internet Protocol	Communications Coordinator/ CMED Staff/ Outside Vendors/ Verizon	DPH/C-MED Centers	Q1	Monthly costs in MHA contract and Commonwealth MS contract for technical assistance
Level 1 Interoperable Communication Systems	Maintain RMCC Telecommunications Lines	Communications Coordinator/RMCC Staff	DPH	Ongoing – Q1-Q4	Annual Cost.
Level 1 Interoperable Communication Systems	Inventory, Tally and Disseminate Locations of HAM Radios and Licensed HAM Radio Operators at Hospitals	Communications Coordinator/MEMA Staff/ARES staff	DPH	Q1	No cost to this grant cycle as it could be collected during the survey this summer.
Level 1 Interoperable Communication Systems	Identification and Participation of Hospitals or Healthcare Partners in TSP	Communications Coordinator	DPH/Hospitals	Q1-Q4	New registration and monthly costs associated with this.

	Program				
Level 1 Interoperable Communication Systems	Participation in Statewide Communications and Interoperability Plan	Communications Coordinator/State Interoperability Executive Committee/Various Community Stakeholders	DPH	Q1-Q4	No budget impact.
Level 1 Bed Tracking	Automatic Transfer of Available Bed Data to Federal HAvBED System	Site Programmer	DPH	Q1-Q4	Cost covered through contract with TSG.
Level 1 Bed Tracking	Add Emergency Department Capability	Site Programmer/ HHAN Coordinator/ EPB Exercise Staff	DPH	Q1-Q4	Cost covered through contract with TSG.
Level 1 Bed Tracking	Add a Failover Server	Site Programmer/WebEOC programmer	DPH	Q1-Q4	Cost covered through contract with TSG.
Level 1 Bed Tracking	Simplify and Facilitate Notification and Alerting Process for Hospital Capacity Website's Users	Site Programmer/ HHAN Coordinator	DPH	Q1-Q4	Cost covered through contract with TSG.
Level 1 Bed Tracking	Add GIS Mapping	Site Programmer/GIS staff	DPH	Q1-Q4	
Level 1 ESAR-VHP	Expanded Volunteer Recruitment	MSAR/MRC Coordinator/ MMS staff/ DMH/ IT Coordinator	DPH/MMS	Q1-Q4	Cost covered through contract with MMS and through ISA with DMH.
Level 1 ESAR-VHP	Credentialing of Volunteers	MSAR/MRC Coordinator/MMS staff/IT Coordinator	DPH/MMS	Q1-Q4	Cost covered through contract with MMS and DelValle.
Level 1 ESAR-VHP	Volunteer Retention	MSAR/MRC Coordinator/MMS staff/DelValle Institute	DPH/MMS/DelValle Institute	Q1-Q4	
Level 1 ESAR-VHP	Continue Development of Activation and Deployment Protocols and Exercise	MSAR/MRC Coordinator/IT Coordinator/EPB staff/HHAN IT staff/various stakeholders	DPH	Q1-Q4	
Level 1 Fatality Management	Contract to Assist State-level Planning Efforts	Contracted Planner	DPH	Q1-Q4?	Cost covered through ISA with OCME.
Level 1	Creation of a	Mass Fatality	DPH	Q1-Q4?	Cost covered

Fatality Management	Mass Fatality Working Group	Working Group/Contracted Planner?			through ISA with OCME.
Level 1 Fatality Management	Development of a Fatality Management Toolkit for Communities	Mass Fatality Working Group/Contracted Planner?	DPH		Cost covered through ISA with OCME.
Level 1 Fatality Management	Needs of At-Risk Populations	Contracted Planner/DMH, EPB staff/various stakeholders and community organizations	DPH	Q1-Q4	Cost covered through contract with MMS and through ISA with DMH.
Level 1 Fatality Management	ESAR_VHP	MSAR/MRC Coordinator/IT Coordinator	DPH	Q1-Q4	
Level 1 Fatality Management	Exercise of Plans	EPB Staff/MEMA/EOPPS	DPH	Q1-Q4	Staff time costs.
Level 1 Medical Evacuation/Shelter in Place	Gap Analysis - Community Integration	DPH EPB Staff	Hospital Preparedness Regions	Ongoing – Q1-Q4	Costs covered through direct funding allocations to hospitals.
Level 1 Medical Evacuation/Shelter in Place	Gap Analysis - Regional and Statewide Integration	DPH EPB Staff	DPH	Ongoing – Q1-Q4	Staff time costs.
Level 1 Medical Evacuation/Shelter in Place	Competency Based Training on Evacuations	Training liaison to DFS	DFS Fire Academy	Ongoing – Q1-Q4	Cost covered through ISA with DFS.
Level 1 Medical Evacuation/Shelter in Place	Shelter-In-Place Plans	Hospital preparedness coordinator	DPH and Hospitals	Ongoing – Q1-Q4	Costs covered through direct funding allocations to hospitals.
Level 1 – Partnership/Coalition Development	Establish Second Partnership Program	DPH EPB Staff	DPH	Q1-Q4	Costs covered through direct funding allocations to hospitals.
Level 1 – Partnership/Coalition Development	Development of Memoranda of Understanding (MOU) within Partnerships	DPH EPB Staff/PEER Staff Members/TBD Partner Members	DPH	Q1-Q4	Costs covered through direct funding allocations to hospitals.
Level 1 – Partnership/Coalition Development	Test Partnership MOUs during Tabletop Exercises	DPH EPB Staff/PEER Staff Members/TBD Partner Members	DPH	Q1-Q4	Staff time costs.
Level 2 ACS	Ensure mutli-disciplinary participation in community-based ACS	Regional Hospital Preparedness Coordinators/Various Community Stakeholders	DPH/Hospitals	Q1-Q4	
Level 2 ACS	Develop a continuum of	Hospital Preparedness	DPH	Q1-Q4	

	scaleable all-hazards ACS models to address medical surge needs.	Program Staff			
Level 2 ACS	Develop consistent policies and procedures to support recruitment, training and retention of MSAR and MRC volunteers who will be to available to staff ACS.	Regional Hospital Preparedness Coordinators/ Public Safety, Emergency Management Groups	DPH	Q1-Q4	
Level 2 ACS	Develop and Finalize Guidance for Liability and Altered Standards of Care	DPH Legal Consultant	DPH	Q1-Q4	Cost covered through contract with legal consultant.
Level 2 Mobile Medical Assets	Identify Federal Medical Station	DPH Hospital Staff/MEMA ESF-6 workgroup	DPH	Q1-Q4	Staff time costs.
Level 2 Pharmaceutical Caches	Develop pharmaceutical cache operational plan	Regional Hospital Preparedness Coordinator/EPB Staff	DPH and Hospitals	Q1-Q4	Costs covered through direct funding allocations to hospitals.
Level 2 Pharmaceutical Caches	Establish protocols for web-based reporting of pharmaceutical cache inventory.	Regional Hospital Coordinators, MEMA, EPB staff, Hospitals	DPH, MEMA and Hospitals	Q1-Q4	Staff time costs.
Level 2 Personal Protective Equipment	Assess hospitals' existing PPE levels against MA PPE strategy document	Deputy Hospital Preparedness Coordinator/Hospital Staff	DPH/Hospitals	Q1-Q4	Staff time costs.
Level 2 Personal Protective Equipment	Enable hospitals and pre-hospital responders and receivers to be trained in proper, safe use of PPE	Training liaison to DFS Hospital/EMS Coordinator	DFS/Hospitals	Q1-Q4	Cost covered through ISA with DFS.
Level 2 Personal Protective Equipment	Engage hospitals to identify disciplines trained in PPE	Deputy Hospital Preparedness Coordinator/Hospital Staff	DPH/Hospitals	Q1-Q4	Staff time costs.
Level 2 – Decon. Overarching	Exercising of decontamination	Hospital Preparedness	DFS and Hospitals	Q1-Q4	Costs covered through direct

Exercises	capabilities	Coordinator, Training liaison to DFS, EPB Staff			funding allocations to hospitals.
Level 2 – Decon. Overarching Education & Training Overarching NIMS	Continuation of competency based hospital and first responder decon training	Hospital Preparedness Coordinator, Training liaison to DFS, EPB Staff	DFS and Hospitals	Q1- Q4	Cost covered through ISA with DFS.
Level 2 – Decon. Level 2 - PPE	Deployment of MDU during real world events	Hospital Preparedness Coordinator/Deputy	DPH and Hospitals	Q1- Q4	Costs covered through direct funding allocations to hospitals.
Level 2 Medical Reserve Corps	Continue to support MRC Recruitment	MSAR/MRC Coordinator/Regional MRC Coordinators/Hospital Staff	DPH/Hospitals	Q1-Q4	Costs covered through direct funding allocations to hospitals.
Level 2 Medical Reserve Corps	Activating volunteers	EPB Staff/Local Health	DPH	Q1-Q4	
Level 2 Medical Reserve Corps	Involving MRCs in hospital exercises	MSAR/MRC Coordinator/MRC Coordinators/Hospital Staff	DPH/Hospitals	Q1-Q4	
Level 2 Critical Infrastructure	equipment for protection of the hospital environment	Hospital Preparedness Coordinator	DPH and Hospitals	Ongoing – Q1-Q4	Costs covered through direct funding allocations to hospitals.
Level 2 Critical Infrastructure	equipment and supplies for healthcare service preservation or restoration	Hospital Preparedness Coordinator	DPH and Hospitals	Ongoing – Q1-Q4	Costs covered through direct funding allocations to hospitals.
Level 2 Critical Infrastructure	equipment for force protection	Hospital Preparedness Coordinator	DPH and Hospitals	Ongoing – Q1-Q4	Costs covered through direct funding allocations to hospitals.

Evaluation Plan and Program Monitoring

Evaluation

Tracking System for Funding

All vendor relationships are governed by regulation, specifically, Commonwealth of Massachusetts Regulation 801 CMR 21.00 Procurement of Commodities or Services. In addition this program's spending of federal funds are subject to Federal Audit Regulation A-133. All contractual agreements are governed by the Commonwealth's Terms and Conditions for Contractual Agreements.

These documents provide the tools for DPH vendors and fiscal managers to meet the requirement to review vendor contract compliance. All spending is processed through the Office of the State Comptroller via the Massachusetts Management Accounting and Reporting System (MMARS). Post-expenditure, these funds are drawn from the federal government via PMS.

Specifically, and in addition to overall requirements, DPH reviews all vendor invoices individually, in part, to ensure that services and items requested for reimbursement have been provided and delivered. This procedure will continue for all future prospective vendor invoices, as required through the Massachusetts Management Accounting and Reporting System, governed by the Commonwealth of Massachusetts Office of the State Comptroller, a division of the Commonwealth's Executive Office of Administration and Finance. All expenditures (of all funding sources) are governed, at a minimum, by state finance law of the Commonwealth of Massachusetts.

Vendor requests for payment must be made via invoice, reviewed and signed at the program level indicating internal review and acceptability of invoice and approval of payment against the contracted funding level. In addition to consistent audit of invoices, random audit of programmatic spending has occurred and will continue to occur, with record of these encounters maintained by DPH administrators, for review by future audit teams.

All expenditures of the DPH program are tracked via the Massachusetts Management Accounting and Reporting System referenced previously, and expenditures of the ASPR program will continue to be tracked through this system, as this system is the only available methodology for payment processing from all funding sources. The MMARS system will function as the automated accounting system and will serve as the base upon which ASPR expenditures are segregated and tracked through use of contract identifiers and subsequent payment reference codes. In addition, an overlay system of the Massachusetts Department of Public Health, entitled FACS: Federal Fiscal Year Detail by Object Code also provides specific expenditure detail.

The Commonwealth's MMARS System is the statewide system of the Commonwealth, through which all encumbrance and expenditures are executed, and therefore is the system by which all fiscal reporting to the awarding authorities, has been, and will continue to be, made.

Expenditure Tracking of Partner Entities

Historically, the HPP award to DPH has required and directed allocation of funding via provision of contracts to hospital and healthcare partners. To allow this task to be executed expediently, while still maintaining government oversight of the grant funds, the utilization of the contracting system accomplished this goal. Each contractual agreement includes a reporting relationship established at contract engagement, requiring self-reporting of expenditures. These serve as one piece of aggregate financial data. These contracts contain a Memorandum of Agreement (MOA) that contains both the fiscal and programmatic performance measures and reporting requirements. Additionally, staff of this program and stationed in the field as hospital regional preparedness coordinators have conducted financial audit of expenditures, utilizing HPP funding, and have conducted these reviews on-site at hospitals, including review of purchase orders and reporting on completion of tasks, both from a fiscal and programmatic perspective.

Statistical Information Gathering

A contractor is engaged annually to conduct a statewide survey. The purpose of the survey is to gather healthcare specific and aggregate data, which allows accurate and timely information to be reported both mid-annually and annually, for the Commonwealth's submission of performance measures and data elements reporting.

The hospital MOAs for the 2008 HPP will contain the requirements for reporting of programmatic deliverables such as NIMS compliance, submission of mutual aid agreements, HVAs, fatality management plans, hospital evacuation and shelter-in-place plans, training and exercise rosters and emergency preparedness documents.

The online Massachusetts HAvBED reporting system has programmable fields that allow DPH to capture data and immediate requests for information on a 24/7 basis. Regional hospital coordinators perform program monitoring when meeting with hospitals during the course of the contract period. The annual fiscal audit referenced above will include a program review of MOA deliverables and performance measures in FFY 2007.

Program Monitoring

Level One Sub-Capabilities

1) Interoperable Communication System Evaluation

Weekly Testing and Exercising of the MA Hospital Emergency Preparedness Communications System - DPH conducts weekly drills of the various elements of the communications system in order to increase participation, retain membership, increase drill compliance and to address any issues or difficulties with the system's use. DPH will schedule group and/or individual training sessions for those that may need assistance with any components of the system. Drill evaluation and results will be synthesized into after action reports for submission.

DPH will continue to develop operational, redundant communications systems, capable of communication both horizontally, between healthcare providers, and vertically, within the jurisdiction incident command structure, in accordance with the tiered response framework per the MSC Handbook. Nextel and Direct Connect; Satellite phone and HHAN drills will be conducted for State and local personnel as well as the private sector (i.e. hospitals). A Communications component will be incorporated into two (2) Functional Exercises that will be conducted in both the CRI and Non-CRI cities to test our interoperable communications capabilities results will be compiled in a subsequent after action report.

2) Telecommunications Service Priority Program Evaluation

During the project period, DPH will identify hospitals or healthcare entities for participation in the FCC's Telecommunications Service Priority Program (TSP). DPH will ensure that participating facilities are high priority medical surge points at risk of loss/interruption of communications capability.

DPH will provide a list of facilities currently participating in TSP, noting whether federal funds were used to achieve this purpose) and a list of those being considered for future participation.

3) Bed Tracking System Evaluation

Testing Code - Whenever a new code is written for the MA Hospital Capacity Website, it is loaded and tested on a development server. There are several user types for this application, including Central Administrator, CMED and Hospital user. All login types are assessed via testing protocols to ensure all website functionality is correct and working to acceptable standards prior to code being loaded to the live site. Both programmer and the DPH Communications Coordinator run through the testing protocols prior to using new elements on the system.

Reporting Compliance – In order to increase participation in any bed count and inventory requests, DPH conducts monthly Hospital Capacity Website drills. A message is sent out via the HHAN and Hospital Preparedness Listserv to notify hospital and EMS users of the drill. Drill results are disseminated to hospitals and DPH staff troubleshoots issues to increase compliance. DPH will incorporate the RSS feeds, mobile device applications and HHAN integration with any drills and exercises using the Hospital Capacity Website. DPH will schedule group and

individual training sessions for those that may need assistance with the new Hospital Capacity Website applications.

During the project period, DPH will exercise the process of reporting available beds for at least 75% of participating hospitals, in accordance with HAvBED definitions. Available bed information will be reported to the HHS SOC within 4 hours or less of the request to do so. The efficacy of this process will be analyzed and reported in an HSEEP compliant After Action Report.

Participating hospitals will exercise the process of reporting available beds, in accordance with the HAvBED definition. DPH will request that all reporting from the hospitals to the State EOC takes place within 60 minutes or less of the request to do so.

4) ESAR-VHP System Evaluation

In addition to evaluation from the ASPR ESAR-VHP program, DPH hopes to evaluate the MSAR program and its efforts to recruit and retain volunteers by seeing an increase in the number of volunteers who have completed the application and training and who have kept their information up to date. Another measure of progress will be the number of MSAR volunteers who attend trainings, and DPH will continue to track the various existing pathways (MSAR Course Evaluation, MSAR emails, hospital and regional contacts) to monitor feedback about the program. In addition, the program and its capabilities will be tested through inclusion in a number of drills and exercises that are part of the state's Multiyear Training and Exercise Plan (TEP).

During the project period, DPH will demonstrate the ability to query the ESAR-VHP (MSAR) system during an exercise or actual event. The query will generate a list of potential volunteer health professionals by discipline and credential level, within 2 hours of the request being issued. DPH will compile an initial list of volunteer health professionals, by discipline and credential level within 12 hours of the request to do so. A verified list will be submitted to the requesting body or HHS SOC within 24 hours of the initial request.

Various drills will be conducted to simulate activation of personnel and track response time capability. An MSAR component will be incorporated into two (2) Functional Exercises that will be conducted in both the CRI and Non-CRI cities to test our interoperable communications capabilities.

5) Fatality Management Plans Evaluation

During grant year FFY 2008, DPH will assist hospitals and healthcare organizations to integrate their fatality management plans into their municipality's comprehensive emergency management plan (CEMP). All participating hospitals will be required to submit their facility's fatality management plan to the Regional Hospital Coordinators for review, and DPH will work with the Massachusetts Emergency Management Agency (MEMA) to review and document the inclusion of fatality management plans as annexes and appendices in municipal CEMPs. The testing and evaluation of Fatality management planning will be a critical component in the Department's Multi-year Training and Exercise Plan (TEP).

During the project period, DPH will report the number of participating hospitals that have completed draft plans for mass fatality management. DPH will examine the content of the plans to ensure that at minimum, they include information on: (a) trained and available personnel; (b) equipment, supplies, facilities, and other material resources; (c) the operational structure and standard operating procedures for disposition of the deceased. A facilitated workshop will be held for all healthcare facilities to help them frame their Fatality Management Plans for consistency across the Commonwealth. Tabletop, Functional and Full-Scale exercises will be planned to test and validate planning.

6) Hospital Evacuation/Shelter-in-Place Plan Evaluation

Evaluation of the success of the projects will occur through regional tabletop exercises and multi-regional functional exercises, which will include formal AARs. Regional Hospital Coordinators will work with the hospitals to assist in the review of plans and the identification of gaps during after-action reporting and to assist in developing corrective action plans. The cycles of plan, exercise, evaluate, revise will be ongoing and the Regional Hospital Coordinators will revisit the status of corrective action plans at the monthly regional meetings.

DPH will also assist hospitals and healthcare organizations to integrate their Evacuation/Shelter-in-Place plan into their municipality's comprehensive emergency management plan (CEMP). All participating hospitals will be required to submit their facility's plan to the Regional Hospital Coordinators for review, and DPH will work with MEMA to review and document the inclusion of fatality management plans as annexes and appendices in municipal CEMPs.

During the project period, DPH will report the number of participating hospitals that have completed draft plans for medical evacuation. DPH will examine the content of the plans to ensure that at minimum, they include information on: (a) personnel trained in evacuation procedures; (b) transportation means, equipment, supplies, and alternative facilities; (c) the operational structure and standard operating procedures for moving patients as appropriate. A facilitated workshop will be held for all healthcare facilities to help them frame their Evacuation/Shelter-In-Place Plans for consistency across the Commonwealth. Tabletop, Functional and Full-Scale exercises will be planned to test and validate planning.

7) Partnership/Coalition Development Evaluation

DPH will continue to ensure operational partnerships encompassing the CRI and equivalent non-CRI sub-state regions. This partnership shall plan and develop MOUs for sharing assets, personnel and information. These MOUs shall be tested through tabletop exercises conducted in both the CRI and non-CRI regions. Upon the completion of the project period, DPH will submit the following information:

a) the name of the partnership/coalition
b) the location of the partnership/coalition
c) the participant healthcare organizations and other partners
d) the number and type of MOUs that exist

Level Two Sub-Capabilities

1) Alternate Care Sites (ACS) Evaluation

All clusters will be finalized and100% of hospitals will have conducted an ACS exercise (workshop, seminar, Tabletop, or functional) by the end of the FFY08. DPH will continue developing and improving plans for Alternate Care Sites over the course of the project period. Upon the completion of the period, DPH will submit the following information, in accordance with the recommended AHRQ tool and other diagnostic resources:

a) location of ACS(s)
b) number of beds
c) level of care to be provided or types of patients that can be taken care of
d) summary of plans for staffing, supply and re-supply of sites

2) Mobile Medical Assets Evaluation

Successful completion of the objectives above shall be assessed by the identification of one suitable site per region for the deployment of a Federal Medical Station.

3) Pharmaceutical Caches Evaluation

Successful completion of the objectives above shall be assessed by collection of survey results and participation in the on-line inventory reporting exercises.

DPH will develop an operational plan that assures storage, rotation and distribution of critical medications through the supply chain during an emergency for healthcare providers and their families. DPH will undertake analysis of and propose funding for the purchase of caches to care for patients in medical facilities. DPH will also designate emergency contacts that will have access to the cache in addition to a contingency plan for access. DPH will continue to work with these stakeholders to develop training and education for healthcare providers on the available assets and identify how those assets would be utilized.

4) Personal protective Equipment Evaluation

The success of PPE objectives will be measured by hospital survey results, class enrollment levels and class participant evaluations.

During the project period, DPH will continue to ensure adequate types and amounts of PPE to protect current and additional trained healthcare personnel expected in support of events of highest risk and identified through the State-based HVA or assessment. DPH will assess the existing level(s) of personal protective equipment utilized by the hospital and pre-hospital healthcare providers and other associated public health disciplines against the Massachusetts Statewide personal protective equipment strategy document.

5) Decontamination Evaluation

The decontamination program will be evaluated through the tracking of the activities performed by the fire departments and their response partners during the grant period, analysis of exercise AARs, and survey results.

DPH will work to ensure that adequate portable and/or fixed decontamination system capability exists Statewide. The level of capability will be in accordance with the number of required surge

capacity beds expected to support the events of highest risk identified through a State-based HVA or assessment.

In accordance with OSHA guidance, DPH will work to ensure that all participating hospitals shall be capable of providing decontamination to individuals with potential or actual hazardous agents in or on their body. This decontamination process will be integrated with local, regional and State planning.

6) Medical Reserve Corps

During the project period, DPH will continue to support the integration of MRC units with local, regional and statewide infrastructure. DPH will support the inclusion of MRC units with State and regional assets such as hospitals, Community Health Centers, Long-term Care Facilities and the ESAR-VHP (MSAR) program. MRC volunteers will be encouraged to participate in training and exercises at the local, regional and State level.

7) Critical Infrastructure Protection

During the project period, DPH will examine project proposals that relate directly to resilience and protection of critical facilities and services, based on risk assessments.